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ABSTRACT

Presented are proceedings of the 4th annual (1972) meeting of the National Society for Autistic Children including 11 papers given at the meeting. Listed are officers and board members of the society, the convention committee members, and recipients of citations and awards. The president's report notes past goals, accomplishments, and future goals; and the text of a resolution urges federal involvement in the needs of autistic children. The papers address the following topics: a 1972 progress report on child priority (keynote address); a community based therapeutic program; research progress in areas of vitamins, hypoglycemia, and food intolerances; a description of the Flint, Michigan program which coordinates community services with the educational system; problems in the modification of verbal behavior; a hospital based therapeutic nursery program; a prevocational training program; work with autistic children in the United Kingdom; an interview with a rehabilitated autistic adult; perceptual development in autistic children; and a followup study of childhood schizophrenia. (DB)

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AUTISM

4TH ANNUAL MEETING OF THE NATIONAL SOCIETY FOR AUTISTIC CHILDREN

JUNE 22-24, 1972
FLINT, MICHIGAN

EC 060 708

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National Society for Autistic Children
is dedicated to the education, welfare,
and cure of ALL children with severe
disorders of communication and behavior.

PROCEEDINGS

Printed 1973

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Foreword

During the past few years there has been a gradual but perceptible increase in research, education and provision of services for autistic children. Concomitant with this growth has come an increased need for information on developments in the field. Dissemination of these proceedings to parents of autistic children and to professionals who work with these children is viewed as an important way of meeting this need.

Herbert L. Rooney, Chief
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TABLE OF CONTENTS

Foreword.. ii
Herbert L. Rooney

Officers and Board of the Society............................ iii

Convention Committee... v

Report of the President...................................... 1
S. Clarence Griffith, Jr.

Resolution by the Board of Directors......................... 6

Keynote Address - Child Priority: A Progress Report — 1972.......... 7
Bertram S. Brown

The Initiation of a Program in which the Community is the Milieu..... 14
George P. Inge III

Progress in Research... 21
Bernard Rimland

The Mott Program: Community Education - Services for Everybody....... 33
Peter L. Clancy

Problems in the Modification of Verbal Behavior.............. 39
Stanley M. Sapon

A Comprehensive Program for Autistic Children................ 70
James W. Johnson

Pre-Vocational Training Program at Benhaven.................. 92
Amy L. Lettick

The Handicaps of Autistic Children........................... 106
Lorna Wing

An Interview with a Rehabilitated Autistic Adult............. 123
Barbara Alter & Jerry Alter

Perceptual Development in Autistic Children.................. 134
Morton J. Schomer

Childhood Schizophrenia: Evolution to Adulthood.............. 147
Ralph Rabinovitch

Citations and Awards... 159

REPORT OF THE PRESIDENT OF
NSAC
TO THE MEMBERSHIP

S. Clarence Griffith, Jr.
President, National Society for
Autistic Children
July 1970 to June 1972

It has been my privilege to serve as your President for the past two years. Therefore, I would like to take this opportunity to give you a brief report of some of our activities during that time.

PAST GOALS

In thinking about our accomplishments, it is helpful to first reflect back to our 1970 Annual Meeting in San Francisco and take a look at the goals we established at that time. Prior to that meeting, knowing that I was being nominated for the Presidency, I thought that it was important for the membership to have some idea of what I had in mind prior to my election. Therefore, in May, 1970 I circulated a memorandum containing my recommendation of some goals. This was the first time that specific goals had been enumerated; we all have had some common agreement as to what we ought to do but we had not enumerated specific goals as such. At that time, I offered eight goals and an additional one was added by the Board of Directors. These nine goals have provided the framework within which we have been working these past two years. The goals as approved by your Board of Directors in June, 1970, in San Francisco are as follows:

1. To establish immediately an information and referral service with paid, full or part-time staff.

2. To encourage and seek National (and State) legislation for the welfare of our children.

3. To expand our Board of Directors so as to include a wider representation (such as professionals, business men, etc.). Parents should always be in the majority but others are needed so as to maintain objectivity.

4. To encourage and expand the general membership newsletter.

5. To increase our general membership so as to have a louder more forceful voice. We should encourage professionals to join us.

6. To encourage and foster research.

7. To develop a closer relationship with professionals and with other organizations similar to ours.

8. To increase our fund raising activities so as to help accomplish our goals.

9. To encourage people to train for jobs as professionals, para-professional and ancillary services personnel.

The foregoing goals are not listed in any order of rank or priority. In reviewing these goals, we have accomplished all but two or three (or are in the process of doing so) and I think these two or three will continue to be goals---continual goals.

ACCOMPLISHMENTS

During the past two years some of our accomplishments have been as follows:

1. Adoption of specific goals as outlined above.

2. Adoption of a formal organization chart with functioning committees.

3. Increased the general membership from approximately 2,000 to 4,000 members.

4. Improved communications with Chapters through the use of periodic memoranda from the President to Chapter Presidents.

5. NSAC has become more visible--more people know about us. We were recently featured in the NIMH employee publication, "Mental Health Matters."

6. We have at least two federally financed contracts that are under negotiation. (Ed. note: Contracts now in effect).

7. Our operating budget has doubled; not because of increased dues but because of the increase in membership.

8. We now obtain an annual audit of our financial activities prepared by an independent auditing firm.

9. We have employed permanent part-time staff for the headquarters office in Albany, N.Y.

10. We have installed a 24-hour telephone answering service in the Albany office.

11. We have been receiving increased support from NSAC Chapters.

12. We have improved our liaison with other organizations. This past year NSAC was represented at the Annual National Convention of both the C.E.C. and the A.C.L.D. and we had display booths at each.

13. We initiated our Information and Referral Service under the very capable direction of Ruth Sullivan.

14. We developed a postal cancellation die hub which carries an NSAC message on post marked mail.

15. We started the sale of our very attractive all-occasion NSAC logo seals.

16. Under the able leadership of Ruth Dyer we initiated the NSAC Book Store at our Albany office.

17. We have greatly improved the appearance and content of the Newsletter, thanks to Clara Park and Victor Winston.

18. Although not an official publication of NSAC, the "Journal of Autism and Childhood Schizophrenia," came into being because of the personal initiative of NSAC parents, Victor Winston, President of Scripta Publishing Corporation and Herman S. Preiser, former NSAC Board Member and currently Chairman of NSAC's Steering and Liaison Committee.

RECOMMENDED FUTURE GOALS (OUR NEEDS)

With regard to the future of NSAC, we must consider, among other things, the following:-

1. We must place top priority on the need for research in the basic sciences and for education.
2. We need more active support from the Chapters and the membership at large. We need more volunteer workers and more financial support.
3. We need to put more emphasis on the needs of the institutionalized child.
4. We need to put more emphasis on the needs of the adolescent and older child.
5. There is a need for an Executive Vice-President or some similar office to relieve the President of some of the administrative burden of his job.
6. We need to reorganize and expand the Professional Advisory Board.
7. We need more operating funds.
8. We need to work for legislation that will benefit our children.
9. We should give consideration to the need for moving our central office, perhaps to the Washington, D.C. area.
10. We should plan to hold every second or third annual meeting in Washington, D.C. so as to draw more national attention to NSAC, particularly from Congressmen and Senators.
11. We need more control over local chapters, unless there is evidence of more voluntary support of NSAC activities.
12. We need for our committees to be more active.

I appreciate very much the opportunity of serving as your President for the past two years. At this time, I would like to publicly express my appreciation to your Board of Directors, the Committee Chairmen and the various Chapter Officers for their advice, support and very hard work over the past two years.

In summary, we have accomplished a great deal for our children, but we have a long way to go -- there is yet much to be done. I wish we had accomplished more during the past two years but I am proud of what we have done. I ask that each of you actively support the new administration and give the help that will be needed. Our children are counting on you and me.

RESOLUTION BY THE BOARD OF DIRECTORS OF THE NATIONAL SOCIETY FOR AUTISTIC CHILDREN, INC.:

On the occasion of its Fourth Annual Meeting
and Conference, held June 21 to June 24, 1972 in
Flint, Michigan, the

National Society for Autistic Children,
In appreciation of the interest manifested by its
guests from the

National Institute of Mental Health
and the

Office of Child Development
and
In earnest pursuit of mobilizing the necessary
resources to meet the needs of autistic children,
respectfully requests

DR. BERTRAM BROWN,

Director of the
National Institute of Mental Health
to express to his colleagues

ELLIOT RICHARDSON,

Secretary of
Health, Education and Welfare,

and
EDWARD NEWMAN,

Commissioner of
Social and Rehabilitation Services,

the Society's deep concern that provision be made in the implementation of the Developmental Disabilities Act to serve the needs of autistic children.

Adopted this 23rd day of June, 1972

/s/ S.C. Griffith, Jr.
President

KEYNOTE ADDRESS

CHILD PRIORITY: A PROGRESS REPORT - - 1972

Bertram S. Brown, M.D.
Director
National Institute of
Mental Health

New Year's day comes in a lot of different packages. We have January 1st. We have the Chinese New Year. And in a little more than a week we have the bureaucracy's special day which comes with the beginning of a new fiscal year.

Whatever the date, the familiar connotation is that it is a good time to assess and evaluate, to look back at the progress that has been made and to look ahead at what is planned. Tonight I would like to share my governmental New Year reflections with you.

Your involvement in this conference parallels a deep and abiding concern of my own--the mental health and the enhanced development of our children. It seems appropriate, therefore, that we look together at our achievements of the past year--and I will share with you an exciting new development of this past week--as well as toward our plans and hopes for the future.

And also, I want to speak to you about facts. They are the hard facts that lend substance to the mutual hope we have in a special area of interest. As you know, the NIMH is involved in a great many sweeping social issues. Drug abuse, the effects of television violence--these gain a special prominence because they are highlights in this society at this point in time, and rightfully so.

But tonight I would like to zero in, focus on the concern for child mental health that I have established as the number one priority of the NIMH.

I believe I can speak of hope in this area and know that the hope is based on a realistic assessment of where we stand now. The hope comes from two sources. First is an active demand for children's services which is steadily increasing across the country. Second, is the development of our own considerable resources to the point where we can readily provide effective local services. It is our job now to synchronize the demand with the services.

My concern with child mental health is partly an intuitive thing. One senses a need to fight the real neglect we all too often show for children. It is also a conscious goal--one that I, in my role at the NIMH, am uniquely positioned to strive for.

First, I want to share with you our most recent achievement. Within the past few days, the NIMH has approved grants of $10 million to implement an exciting new program, Part F of the Community Mental Health Centers Act. This child-centered program will see the development of a preventive outreach program that will serve children in all parts of the country in normal family and neighborhood settings.

Part F is designed to facilitate innovative approaches to coordinating and integrating a spectrum of existing human services resources for children. As it was legislated, Part F of the Centers Act authorized grants for construction, staffing, training, surveys, and field trials of mental health programs for children. In this initial year, due to constraints of time and funds, the effort is being directed toward the design of innovative programs and staffing services.

The instant popularity of the program already has been evidenced. Despite an extremely short period from the announcement of the program to its implementation, we have received more than 130 grant applications from 43 states. Available funds have allowed the approval of 64 of these proposals.

The excitement of the Part F program, in my opinion, lies in the manner in which the resulting services will be truly a community accomplishment.

An integral part of the program is the provision for collaborative organization and delivery of services by ommunity mental health centers and other local community child and family resources. This plan enables communities to tailor-make their own program in the way that will best fit their self-perceived needs.

From Raleigh, North Carolina, for example, an application proposed that the public school system provide matching funds to the grant support. Children aged 3-to-6 years-old would be the primary recipients for outpatient services focusing on short term therapy for disturbed children. The proposal includes an active consultation and education program involving the schools, the health department, the police, the local Drug Abuse program, Family Services, the local Headstart program, etc. All children in the catchment area would be eligible.

An application from Kansas has proposed the development of home and foster home alternatives to children's inpatient care, an innovation particularly significant to rural areas. Plans there also include a strong effort to work with young couples even prior to parenthood. The proposal further provides for career training for indigenous and volunteer child mental health workers.

A Utah program would focus on the early prevention of emotional problems in pre-school Chicano children. A proposed parent education program there would be directly responsive to the local needs of the community.

Part F. represents a major accomplishment, an achievement in which we can all take pride. Each of these projects will serve as a model for further development and innovation as additional grants are awarded. And the approved prototypes will help meet the urgent national need for extending mental health services without delay to the greatest number of children.

However, beyond the sphere of preventive services and outreach programs, we must attend to severely ill children---children diagnosed as autistic and as childhood schizophrenics. These children are your pressing concern, your immediate concern. I respect and share that concern.

I can trace my interest in autism back to medical school, about 20 years ago. At that time, the writings and expertise of Dr. Leo Kanner--if I may single out one individual--served as an inspiration and an education for me. As I pursued these medical school interests during my pediatric internship at Yale, the chief of the department, Dr. Milton J.E. Senn, asked me to help study a set of 5-year-old autistic twins. These children had been seen by several leading practitioners of the day, and the depth of the pathos of parents and children was awesome.

My encounter with this family led to my first published paper, "Akerfeldt Test for Childhood Schizophrenia." Since that time I have felt that we must pursue our understanding of this problem on all fronts, from the biological to the anthropological.

These early interests led to a set of professional endeavors that included two years in the White House as President Kennedy's staff person on mental retardation. Soon after I became director of the NIMH, I established child mental health as a top priority. An ad hoc committee of more than 80 staff members was charged to review the Institute's activities in this field. The committee was directed to make specific recommendations concerning improvement and expansion of those activities.

Although childhood schizophrenia and autism are relatively new diagnostic categories--first identified only thirty years ago--and are also far less prevalent than schizophrenia of adolescence and adulthood, the committee recognized the need for research impetus in this area.

Currently, the Institute is funding 24 research projects directly related to autism, for a total of $1.85 million. These studies, combined with other basic research programs, are covering the problem on all fronts.

You are well aware of the complexity and heterogeneity of the characteristics of children included in this diagnostic group. In speaking of competing theories and "promising" research, we must guard against oversimplifying an extremely complex and poorly understood problem.

As a research area, childhood schizophrenia and autism have gone through the necessary steps for the development of studies directed toward elucidating causes. Child psychiatrists have begun to agree upon the clinical description of severely disturbed children to whom these diagnoses should be properly applied. In general, they are now in accord that children with functional psychoses are characterized by difficulties in four major areas: a) perception; b) language; c) social attachments; and d) sense of self, or identity.

Although it is still under continual refinement, the question "what is it?" appears to be relatively well-answered. The questions "how" and "why" remain to be answered.

Understandably, parents who must live with, care for, and raise seriously disturbed children want to know the "why" of the problem and justifiably wish a means for curing it.

It is difficult to accept the disappointing truth which must be voiced in an honest assessment of where we are today. Investigators presently do not have adequate answers to these questions. That is not to say that neither causal hypotheses nor helpful treatments are available. It does mean that no simple or completely satisfactory causal or treatment answers have been found.

I would like to describe to you some of the stellar research efforts that are being made today, to indicate the scope of our attack on this problem.

At New York University, a scientist is evaluating the effects of various drug therapies in disturbed children. It has been found that youngsters do not react to psychotropic drugs in the same way as adults. Working with children aged 2 to 12, with diagnoses ranging from the neuroses to the most severe form of schizophrenia, this research is successfully determining which drugs are most effective for specific disorders. One drug in particular has been identified which shows a significantly beneficial effect on language skills. Plans are already being made for collaborative testing of the drug.

A young scientist in Tennessee is conducting a pilot study in which he is instructing the parents and teachers of a young autistic boy in the techniques of reinforcement therapy. Social and material reinforcers will be used by the "tutored" parents and teachers in the home and classroom to motivate the child to come out of his dream world. Although such techniques have been moderately successful in institutional settings, children often appear to regress when they return home. A program such as this will ensure a continued high level of personal contact between the child and a specially trained therapist. The project may offer an economic and effective alternative to lengthy hospitalization.

At Stanford, computerized programs are being developed which will stimulate patient-therapist interactions. In one phase of the study involving severely disturbed, non-speaking children, interaction with the computer has resulted in notable language improvement. Children who were unable to speak were able to respond vocally to the computer and this has carried over into their everyday life. The investigator has also developed a computer program of games for autistic children. Four children who have used the new program are now volunteering self-constructed and appropriate sentences.

An added benefit of this project is the potential it holds for training skilled specialists in the field of severe childhood psychoses.

To deal thoroughly with the disorders, improved methods of prevention are a must. To this end an Indiana researcher is conducting a comprehensive study of hospitalized autistic children who developed symptoms of the disease before their third birthday. She plans to analyze the children's behavior and to undertake physiological studies of their nervous and endocrine systems. This research aims at pinpointing critical conditions in early life which may give rise to clinical symptoms and also at developing appropriate preventive techniques.

I do not mean for these brief accounts to be superficially optimistic. I pass them on to you as an indication of the types of research that are being supported by the Institute.

Mr. Griffith and Mr. Weiss recently visited the NIMH and met with key staff persons regarding our programs and our interests. They know what the picture is, they are well informed on the scientific trends, the conflicts, and the successes in the treatment of autism.

This evening I welcome the opportunity to reaffirm to this Society the total commitment of myself and the Institute to a final resolution of this critical problem.

It is my fondest hope that through the efforts of the staff and of the individuals supported by the National Institute of Mental Health, and the efforts of professional groups, voluntary groups, and parents throughout the world, we will be able to offer our children not only more care and better care, but the great boon of freedom from illness via prevention and cure.

THE INITIATION OF A PROGRAM IN WHICH THE COMMUNITY IS THE MILIEU

George P. Inge III, M.D.
Program Chief, Adolescent and Children's
Treatment Service
Genesee County Community Mental Health
Services, Flint, Michigan

In May 1970, the Administrative Council of Genesee County Community Mental Health Services recommended to the Commissioner of the Agency, Dr. Ronald Chen, that plans be made for a separate set of services for adolescents and children. Those of us on the staff who undertook the planning of such services accepted certain goals around which we would design the programs. Among them was that by this spring we would have a program which decreased the number of seriously ill youngsters who had to leave the community for residential treatment services; and which would decrease the time those youngsters, who did require such residential placement, had to be away. At the same time, we did not think that reproducing locally, a smaller, less sophisticated version of the kinds of residential services already developed in the state, was the best use of our resources. We therefore sought to design complementary programs that would explore for additional resources from which we could fashion good services.

At the time we started our planning there were 19 youngsters in the community awaiting admission to Pontiac State Hospital's adolescent and children's services and as we were later to learn, at least 126 additional youngsters who were either borderline or psychotic in their functioning. In June, 1970, we began the conversion of a pre-school nursery we were operating for autistic children into a partial hospitalization program. This program had been started in 1965 as a Junior League project and had been continued under the auspices of our agency. The first phase of the conversion had two major goals. They were the establishment of the community as the milieu site for the program, and the provision of a relatively prolonged period during which the child-care staff could develop certain traditions and attitudes, without major interference from other kinds of mental health professionals.

We have conceptualized the community as a treatment site within three major contexts. They are the working-adult context, the public accommodations context and the confidence-building opportunity context.

Our initial speculations about working adults as a therapeutic resource were quite far ranging. At times we shared our experiences and thinking about the degree to which occupations become the core of self-concept and identity for adults. The degree to which our present concern about the relevance of our institutions for the young, may be attributable to the difficulty the rapidly maturing segments of our population has in establishing meaningful contact with a variety of working adults. We thought of ways by which the frequent police-youth confrontations might be in part the result of the police being one of the few kinds of adults that can be readily and extensively observed as they work--contribute, to the society. The fruition of our speculating was that our child-care workers went out with considerable zeal and began to contact businesses in a very specific way. They sought contracts with managers and employees in which it could be arranged that our patients would engage the working adult as he, or she, went about their ordinary work. In some instances having a friend who was employed made the task easier, but in the majority of instances they had to introduce themselves. They acquired 39 business sites with which to start. The businesses ranged from enterprises owned and operated by one person and his, or her, family to departments in such complex institutions as banks. Overall, there was a strong positive response to our efforts. We, of course, encountered situations that were impossible, in that they contained hazards, and regulations that prevented them, that we were in no position to suspect. In many instances the original employee is still relating to the children. What has been most rewarding, however, is the ease with which our fellow-citizens have accepted the concept that they, and we, would relate at the speed of the patient, while leaving maximum responsibility upon the youngster to communicate that he, or she was ready for the relationship to advance.

The second kind of site is what we think of as public accommodations. These range from restaurants, through churches, museums, parks, shopping centers, zoos, airports, etc. Our purpose here has been to expose the youngster to the kinds of broadly available cultural institutions where the opportunities for engaging people at work was low but where we felt that the situations were significant and at the same time likely to be infrequently visited by youngsters who were disruptive or bizarre in their behavior. In sites such as restaurants it was particularly important to acquaint the proprietor with some of the behavior that they and we would have to weather if our relationship was to last. When this part of the program started several dozen glasses of milk and water were precipitously emptied onto the floor, or the table, and considerable food was spilled. We had prepared our hosts for this and arranged not to be the guest of any one restaurant more often than once a month. We have maintained good relations with 12 restaurants where we have breakfast once a week and a snack once a week. I might point out that once it became clear that the child could not escape the situation permanently, by poor behavior, and our staff became more expert at recognizing early signs of loss of control in the child, and acting appropriately and promptly at such times, the incidence of belligerent and other kinds of disruptive behavior diminished appreciably, and stopped altogether in some youngsters. What were once painful expeditions have become pleasurable excursions for most.

Zoos, parks, museums, art galleries present somewhat different kinds of problems technically for the child care staff. The purpose here is to simultaneously protect the child and the environment while adding massively to what the youngster has to attempt to organize. The effort is toward an accumulation of experience that is reasonably "new" and therefore requiring some organizational effort, and which is at the same time not part of the kind of experiences that the patient finds himself able to successfully dismiss, or diminish.

Perhaps we can best explain the nature of our design for the use of this kind of site by taking one modality, and looking at it in terms of present uses and future plans. Up to the present time we have been using our local Institute of Art as a site. Up to now we have confined our excursions there to what the youngsters seem able to enjoy and maintain an active interest in exploring. We feel that while this is a good gallery, it isn't loaded with the kind of masterpieces or the amazing variety of artistic production as is to be found in the Detroit Institute of Arts for example. Our present assessment of how the youngsters respond to this part of the milieu is such that later this summer we feel they as a group will be ready for their first trip to the Detroit Institute of Art. The other ingredient in such an excursion is that we are confident that our combined capacities to perceive early loss of control; effect rapid diminution in the amount of stimulation the patient has to organize and to protect the physical environment is sufficient for the trip to be undertaken. Over the next year our goal is that four such "expanding" excursions will become indicated by the movement of the youngsters in this modality. To intensify this project we are now interviewing a local artist, and we may seek the services of others, to put on demonstrations, at regular intervals, of their capacity to draw relatively neutral objects representationally, in order to give the patients the organizational complication of having to organize the pictures they're seeing with people at work abstracting the world of physical events. The teaching of drawing-again by a practicing artist would follow then when it becomes clear to us that the patient has developed a need for it out of this total experience. When we have indications that the patient has become involved in abstracting into graphic productions events we can share with them in a consistent way, we would then utilize in the program, art therapy as another modality.

In partial review, our model then is designed to create a need to change in the individual by producing a steady increase in what has to be organized, while producing situations in which the patient's reality avoiding and distorting maneuvers, are increasingly less successful; and to accomplish these things in a milieu from which the patient does not have to withdraw when patient status is no longer appropriate.

Our third kind of site is less complex in both its availability and what is involved in our modulating it to meet the needs of the individual patient. These are the sites for what we call our confidence games. At its simplest, it's a youngster trying to decide if he, or she, is going to climb up 8 steps and slide down the slide. The staff role in this simplest form can be described as nonchalantly leaning on something, that is not too far away while, becoming and remaining ready to make a catch, if necessary, with no bounces or dribbles allowed. Most city parks and playground equipment meet this kind of need, and our position is that this is where we should take the children, rather than investing in the necessary equipment ourselves. The more complex kind of confidence game is slightly easier on the staff psychologically, but more difficult physically. It is also the newest addition to our program. This is the use of a park area that offers a variety of terrain that requires varying levels of skills for climbing, negotiating small streams, etc. In this instance the one to one patient-staff ratio sought in all activities out of the center takes on a new dimension. What is required to negotiate the courses that we have varies from an occasional, "We'd better hold hands," to "I won't let you go, if you promise you won't let go of me." We are in the process of evaluating other sites that can be used similarly during the winter. A more traditional part of this aspect of the progress is some kind of swimming facility in the community. We have had reasonable success in using what the community ordinarily provides for children when sufficiently long term commitments to meet our needs have been possible, and expect to continue to be able to do so.

Perhaps the most significant change the use of the community makes necessary in the traditional treatment design is the selection, and training of the "child care workers". For example, just to get in position to offer such a program to sensitive adolescents makes scrapping of the "child" part of the concept almost mandatory. But there are even more serious facets to be considered. Engaging the staffs of on-going businesses while they are engaged in their work in such a way that the youngster experiences consistent pressure to organize the experience, requires a one to one patient-staff ratio on most occasions. And though the staff and kids may leave this center in small groups, they must invariably split up for the actual work. Where is the advantage in this kind of situation for a person who conceptualizes himself, or herself, as an aide, or a junior therapist of some sort? It requires something quite different. An adult engaging an anxious and disturbing youngster in a public situation must be able to react and initiate interaction patterns out of their grasp of clear treatment principles and not be stuck with recollections of directions and policies. Such directions quickly become abstractions glaringly insufficient for coping in the face of the immense interactional potential of the community. The psychiatric aide, nurses aide house parent base for effective work with children in the traditional microcosm becomes clearly inadequate when the community is the milieu. At the same time, there is no decrease in the need of our patients for consitency in how the staff relates to them. The administrative modifications necessitated are quite clear. The men and women who treat children in the community require a kind of technique expanding supervision, that is on-going, where the context is the sharing of their experience with the patients. The supervisor's role is to assist them in the strengthening of the responses that are therapeutic. Directiveness on the part of the supervisor is needed about as much here as it is needed in the teaching of psychotherapy, which means, in my opinion, it has little value. A staff person coping with a shy looking seven year old who can easily respond to a greeting from a stranger by making vulgar and obscene comments about body configuration, and ancestry, has to have more at their disposal than Dr. Somebody's quotations on the management of incipient rage. Once one is free of the notion that people who are good at treating children are good direction takers, it doesn't take long before one becomes interested in hiring men, for example, for reasons other than that some of the patients are boys. One finds a need for colleagues besides those who are gentle in appearance, or subtle in their usual response pattern. In short, children in treatment of this kind at least, need therapeutic exposure to people with quite different kinds of personality and background. Far more difference than could be obtained by having a staff composed of obvious extensions of the kinds of people who are the supervisors and administrators of programs.

In conclusion, I would like to put what I have described in its proper relationship to other available services. Within our services for adolescents and children what has been considered here is the basic treatment modality, and that part of the staff which carries the major load for its implementation. In the program itself are adjunctive processes such as psychotherapy for the youngsters and their parents, special education, and a parent-staff planning team. The psychotherapy is offered by the staff from our outpatient services with the youngster and their parent going to the O.P.D. for these services. The O.P.D.

service also functions as the admissions service to the partial hospitalization program. We have one Special Education instructor in our program, and are in process of attempting to enhance this aspect of the program through collaboration with the public school system. The parent-staff weekly planning meeting is an interim process established to maintain an important area of interaction for the children until the planning program of our agency can be extended to program based planning groups. At present, our patients are youngsters from varied referral sources. Some were referred directly to us by non-treatment oriented services; others were referred by private psychiatrists, who have in some instances continued to provide part of the treatment to the youngster and family; others come to our care after hospitalization in Pontiac State Hospital and the Children's Psychiatric Service at the University of Michigan. Others of our patients are on the waiting list for hospital admission. We have three youngsters who were within the past year on the waiting list to a hospital and who have by agreement between their parents, the hospital, and ourselves been discharged from these waiting lists. Some of our patients are also youngsters who receive some social support and incentive from the Juvenile Division of Genesee County Probate Court. In short, we don't have a single parent-youngster set that is in an isolated relationship with ourselves, and we plan to keep it that way--well within our understanding of the meaning of community.

PROGRESS IN RESEARCH

Bernard Rimland, Ph.D.
Institute for Child Behavior Research
San Diego, California

One of the primary reasons for establishing ICBR in the mid-1960's was to identify promising approaches to the treatment of severe behavior disorders in children, and to disseminate this information to parents and professionals. The first promising approach that we identified was behavior modification, especially the firmly structured program of operant conditioning as developed and practiced by Ivar Lovaas of UCLA. It's hard to believe, now in 1972, that a short half dozen years ago only a handful of people at a few universities had even heard of operant conditioning. Those were the days when NSAC was just getting started, and as I travelled the country, helping start new NSAC chapters and telling audiences what operant conditioning was and how it worked, I met not only skepticism but outright disbelief: "If it works, why isn't it already in common use?" I needn't tell you what a boon operant conditioning has proven to be to so many of our children.

Today I am going to tell you about several other concepts of treating the children which are also rather new and which are therefore again being greeted with skepticism--if not outright hostility. Nevertheless, I am willing to predict that these new forms of treatment will be as accepted five or ten years from now as operant conditioning is today. (I can't help but wonder why so many professionals are willing to tolerate such outmoded treatment methods as play therapy, psychoanalysis and psychotherapy, which have repeatedly been shown to be useless, while objecting to the newer ideas on the grounds that they have not yet been conclusively shown to be useful.)

Vitamin Research

First, I shall talk about our research on high-dosage vitamins. Those of you who are on the mailing list of ICBR recently received our newsletter which described, among other things, the results of two of our recent studies. One study, which was based on the first analysis of data from our questionnaire

Form E-3, provided ratings by several hundred parents of the effectiveness of 14 different drugs as used on their autistic and autistic-type children. Table 1 presents these data.

As you can see, for the total group of children, certain of the drugs (e.g., Dexedrine) seem to impair behavior more than they help, while other drugs (e.g., Mellaril) are more often beneficial than harmful. Half of the drugs appear to have harmed more than helped, and even Mellaril reportedly helped only about one-third of the 277 children on whom it was tried. A severe shortage of funds has prevented us from doing what we want to do next--develop methods of determining _in advance_ which individual child would benefit most from a given drug, so the child and the parents would be spared the miseries of the present trial-and-error, hit-and-miss procedure in which various drugs are tried in the hope of finding one which will work.

The second study whose results were described in our May 1972 newsletter was our so-called "Megavitamin" study. This study involved several hundred children who were given large amounts of vitamin "C" and several of the B vitamins, including especially Niacin, B_6 and Pantothenic acid. The newsletter mentioned that about 40 percent of the children were found to show "Definite" improvement under the vitamin treatment. It then went on to say that because we had been unable to raise the necessary funds, we had been forced to cancel our plans for conducting a second formal study. Instead, we stated we would provide the necessary information to parents and physicians interested in trying the vitamins on additional children.

It embarrasses me to admit this, because I think I am usually more alert than this, but it took my astute friend, Dr. Humphry Osmond, to call my attention to the glaring discrepancy between the parent reports of drug effectiveness on page 1 of our newsletter, and the parent reports of vitamin effectiveness on page 2 of the newsletter. Dr. Osmond asked a now-obvious question: "Why didn't I compare the drugs with the vitamins directly?" Table 2 shows the results of this comparison.

Not only are the vitamins far more likely to help--they are also far less likely to cause any kind of harm--behavioral or physical.

TABLE 1

PARENT EVALUATIONS OF DRUG EFFECTS

Drug Name	Tot.	No Definite Effect	Possibly Helped A Little	Tot.	Some Improvement	Definitely Helped	Tot.	Made A Little Worse	Made Much Worse	Tot
Dexedrine	172	30	18	48	25	19	44	27	53	80
Aventyl	35	16	5	21	3	3	6	5	3	8
Benedryl	151	47	45	92	13	21	34	12	13	25
Compazine	49	15	16	31	5	2	7	4	7	11
Deanol	73	30	16	46	10	7	17	8	2	10
Dilantin	204	69	36	105	18	39	57	21	21	42
Mellaril	277	60	61	121	57	44	101	31	24	55
Stelazine	120	25	27	52	20	20	40	16	12	28
Thorazine	225	49	50	99	25	33	58	39	29	68
Valium	106	28	16	44	9	22	31	17	14	31
Ritalin	66	7	10	17	10	12	22	9	18	27
Phenobarbital	52	11	10	21	3	7	10	7	14	21
Atarax/Vistaril	51	15	12	27	3	6	9	11	4	15
Mysoline	10	0	2	2	1	3	4	2	2	4

TABLE 2

Comparison of Parent Ratings of Effectiveness of All Drugs, Best Drug (Mellaril) and Vitamins

Treatment	Tot.	No Def. Effect	Possibly Helped A Little	Tot.	Some Impr.	Def. Helped	Tot.	Made A Little Worse	Made Much Worse	Tot.
All Drugs (Avg. Drug)	1591 100%	402 25.3	324 20.3	726 45.6	202 12.7	238 14.9	440 27.7	209 13.1	216 13.6	425 26.7
Best Drug (Mellaril)	277 100%	60 21.7	61 22.0	121 43.7	57 20.6	44 15.8	101 36.4	31 11.2	24 8.7	55 19.9
High Dosage Vitamins	191 100%	20 10.4	37 19.4	57 29.8	41 21.5	86 45.0	127 66.5	4 2.1	3 1.6	7 3.7

Some details of the vitamin study have been reported to this group before and therefore need not be repeated here.* The complete report will appear in March 1973 in the forthcoming volume _Orthomolecular Psychiatry_, edited by David R. Hawkins and Linus Pauling, (W.H. Freeman Co., San Francisco).

The findings in Table 2 are of special interest in view of the criticism of our vitamin study commonly made by people who do not understand the design of the study. The criticism was that our positive results might stem from the fact that many parents would be inclined to overrate the vitamins because they want so badly to see their child improve. If this cricicism were valid, the same spurious effect should be seen in the parent's assessment of the drugs. It is not. Since there is clearly much more improvement reported for the vitamins than for the drugs, the argument must be rejected that our vitamin findings reflect only wishful thinking by the parents.

Even though we have not been able to obtain the funds required for a second large-scale formal study of the vitamins, we will continue to work with parents, physicians, and other researchers who wish to try them. In our newsletter we offered a booklet presenting in some detail what we have learned thus far about the use of high dosage vitamins. So far, several hundred parents and physicians have responded to our offer by sending us the $1.00 we ask to cover our costs, along with their written promise to let us know what they learn if they decide to try the vitamins on their children. As these reports come in they will be analyzed and summarized to help us learn more about the vitamin treatment and its effects. In this way, the booklet can be updated with what we learn.

As I said earlier, I predict that in a few years from now the use of high dosages of vitamins will be a commonplace method of treating--and preventing--various disorders. There is a very common misconception that holds that anyone who eats a normal diet will not require extra vitamins. That may (or may not) be true in 90 or more cases out of 100, but it is clearly not true in _all_ cases. Dr. Leon Rosenberg of Yale University

*Proceedings of the 2nd NSAC Convention---available from NSAC, 621 Central Avenue, Albany, New York 12206.

recently published a paper titled Vitamin-Dependent Genetic Disease. In it he described nearly a dozen metabolic disorders, all discovered since 1954, which impair the body's utilization of vitamins to such an extent that the person may require hundreds of times the so-called "Minimum Daily Requirement." Certain of the children Dr. Rosenberg described had been diagnosed autistic--until it was discovered that they excreted large quantities of homocystine in their urine. While the normal child requires only 1 or 2 milligrans of vitamin B_6 per day, these children typically require 200 to 400 milligrams per day before their urine--and their behavior--began to normalize.

Rosenberg is just one of the researchers who is making discoveries in vitamin metabolism. Much of the relevant work is reviewed in my chapter in the book Orthomolecular Psychiatry mentioned earlier. Despite what people tell you, there is a great deal of scientifically valid information supporting the use of high-dosage vitamins in the treatment of mental disorders. Unfortunately, there is an extraordinary amount of prejudice against the idea that a vitamin--a perfectly safe naturally occurring chemical that we all require to sustain life--can be required by some people in large quantities. Every physician has heard of vitamin D-resistant rickets. While most children need only 400 units of vitamin D daily to prevent rickets, others need up to 500 times as much, 200,000 units of vitamin D per day. Why is there so much resistance to the idea that other children require massive amounts of B_3 or B_6 or C, or pantothenic acid--especially since there is so much evidence that many children with autism and similar disorders do require them? In any event, the tide seems to be turning. More and more physicians and parents are becoming interested in this approach, and I for one am delighted to see the change.

Sugar and Hypoglycemia

A second approach which is beginning to win recognition and increased acceptance involves the idea that many autistic-type children--and often their parents, suffer from a metabolic weakness--I won't call it a defect--of their adrenal glands which makes it difficult for them cope with sugar and other carbohydrates in their diets. Most of us have been led to believe that sugar is a natural high-energy food which is perfectly safe except for the calories it contains and except for the fact that it rots out your teeth. Don't be misled. Sugar is a far more dangerous substance than that. For some people--and a substantial proportion of autistic-type children and their families seem to be in this category--sugar has a profoundly disturbing effect on their entire metabolism, including especially their nervous system.

Your body is made to function best when the blood sugar level remains fairly stable. In diabetes, variation in the blood sugar level produces many symptoms and problems, including mental confusion. Related in certain ways to diabetes is the condition called relative hypoglycmia. Hypoglycemia means simply "low blood sugar." "Relative hypoglycemia" refers to a blood sugar level which drops too fast after sugar has been eaten. Physicians can test for relative hypoglycemia by giving a five or six hour, seven blood-sample glucose tolerance test. If your blood sugar drops very dramatically in a short period of time after you've taken a measured quantity of sugar, you've failed the test. When your adrenal glands get the signal that the blood sugar has dropped sharply, they respond on an emergency basis. If this happens day after day, before long, the adrenals become depleted and can no longer carry on their normal function. When this happens, you get jittery and nervous, sleep problems occur, perceptual disorders are experienced, and in general you have a combination of symptoms which are very distressing and often hard to diagnose. Hundreds of thousands of people have been given psychotherapy in vain attempts to cure "psychological" symptoms which were really the result of undiagnosed hypoglycemia.

While the five or six hour glucose tolerance test is the best method now available for detecting relative hypoglycemia, it is none too good. Sometimes even two experts looking at the results of the same test will disagree whether or not it is abnormal. Also, you (or your child) may test out normal today, but if you had been tested last week, when perhaps your adrenal glands had been stressed for several days with a lot of candy or ice cream, the test may have registered abnormal.

Why is sugar so bad for you? Because it burns so fast. When you are hungry and eat some protein--meat, eggs, cheese, nuts or milk, for example,--your body converts the protein to blood sugar and thus to energy, slowly. That is the way your body was designed to produce energy. When you take in sugar--as in a candy bar, cookies, or a soft drink--your blood sugar raises too fast, and lowers too fast, almost explosively, as the carbohydrate is burned up. You can get away with this from time to time, but in the long run it causes trouble. Similarly, you could get temporary high performance out of your car by adding alcohol to the gasoline, but if you did it at all often, you would burn up your engine. Joshua Lederberg, a Nobel-prize winning scientist at Stanford, said at a conference a few years ago that if sugar and the cyclamates were honestly compared, he suspected that sugar rather than cyclamates would have been banned as the more certainly dangerous.

I know of no research that has established a tight linkage between relative hypoglycemia and autistic-type disorders in children. However, I have been impressed with how often I learn from parents that they or their children have been found to have relative hypoglycemia. I have been impressed with how often improvement is reported by families who have removed sugar and other carbohydrates from their diets. Sugar and sugar-containing foods provide, as you know, "empty calories." Children who should be eating meat, fish, cheese, nuts and other protein foods are instead gorging themselves on candy, cupcakes, cookies, punch and the like. They are thus not only taking in dangerous sugar, but simultaneously failing to eat real food. And one strong sign of relative hypoglycemia is an almost insatiable craving for sweets! When the child craves sweets, give him or her some good protein instead as a snack. The hypoglycemia diet includes small feedings every few hours with protein foods.

So even before the research is completed--cut out the sugar! The noted nutritionist, Dr. John Yudkin of the University of London, has recently published Sweet but Dangerous, an excellent book that points out how in the last fifty years sugar consumption in the Western world has increased fantastically. The per capita consumption is now nearly a half pound per day in the U.S. He makes a very convincing case for a direct casual connection between deaths due to heart attacks and sugar intake. The relationship is far stronger than the one between saturated fat intake and heart attack. So again--remove sugar from the diet of your whole family.

Remember, no physician can rule out hypoglycemia with one blood sample. It takes repeated samples over a five or six hour period to plot the blood level curve. Sometimes parents send me a glucose test curve and ask me to interpret it. "Dr. A says it's normal but Dr. B says it isn't. Who is right?" "I'm not an expert," I tell them, "but since the experts disagree, and you know sugar is dangerous, just act as though the test was positive."

I have been able to give only a brief and very incomplete picture of the facts on hypoglycemia. If you are interested in learning more, send $1.00 to the Hypoglycemia Foundation, P.O. Box 98, Fleetwood, Mt. Vernon, New York 10552 and they will send you a good deal of valuable information. On request, they will also send you the name of a physician near you who takes seriously the hazard of hypoglycemia.

Food Intolerances

The third area I want to discuss is a topic that few of us have heard of--allergies of the nervous system. Most of us are well acquainted with the concept of allergies, but we tend to think of only certain body organs as the targets of allergies. We think of the lungs (asthma), the skin (hives), the nose (hay fever), the digestive system ("upset stomach") as being affected by certain foods or other substances. But, strangely enough, until recently, few seem to have recognized that the most sensitive organ in the body, the brain, is also vulnerable to malfunctioning if someone eats or drinks the wrong substances. Obviously, alcohol, LSD and other drugs are widely recognized as distorting brain function.

Again, let me warn you that this topic is a controversial one. There is a strong and important division of opinion in the medical profession on this topic, just as there is on the two previous topics I discussed, vitamin therapy and relative hypoglycemia. You will find physicians who will snort and snarl when you mention these topics. "Humbug!" you will be told, "Nonsense!" Nevertheless, the evidence for food-caused allergies of the nervous system is impressive and convincing, and growing continuously. While I recognize that most physicians today are skeptical about such allergies of the nervous system, and that many may have never even heard the term, I will still predict that in ten or fifteen years the average physician will think of such allergies as an immediate possibility when he sees an autistic-type child, one with learning disabilities or hyperkinesis, or for that matter, an adult with migraine.

Although the nervous system can be intolerant of many things such as gasoline, paint, or natural gas, in addition to foods, I will confine myself to food intolerances.

Wheat is a common and very powerful disrupter of behavior in some children. In the files of our Institute for Child Behavior Research we have case histories of certain children whose behavior becomes completely wild--the child becomes totally unmanageable--for several days after he or she eats any wheat. For these children, even the smallest amount of wheat is too much. Too much can mean the corner of a soda cracker, a chicken leg rolled in flour, a few Wheaties flakes, a hamburger patty to which some of the bun has adhered, or a bowl of tomato soup (yes, tomato soup--read the label). Some of these children, including several who later became textbook examples of autism, were diagnosed as having celiac disease in infancy. Celiac is a disorder in which the child shows characteristic gastrointestinal symptoms on eating wheat, including diarrhea, gas, and/or very large bulky stools. Relatively few children with such wheat intolerance have associated psychological disorders. On the other hand, there are children who show the psychological symptoms but not the gastrointestinal symptoms when they eat wheat. One formerly-autistic boy, now about 14 years old, will sneak bread, cookies or other forbidden wheat products when he can. When his parents or sibs notice his grumpiness and irritability, they will say "Tom, where did you get the wheat this time?" and usually he will confess. For such a child a wheat-free diet is crucial, even though it's hard to maintain. The book Cooking for Your Celiac Child by C.B. Sheedy and N. Keifetz (Dial Press, 1969) is helpful.

Milk is another frequent offender, although unlike wheat, small amounts of milk can often be tolerated by milk-sensitive children. One family wrote me several years ago that their autistic-type daughter had shown remarkable improvement when the family had been transferred to Alaska. On returning to the U.S., she became worse again. A little detective work revealed milk, which was hard to get in their part of Alaska, to be the villain.

One of my office workers, after reading the incoming correspondence and the material on milk intolerance in our files, took her bright but troublesome and irritable normal milk-loving teenage son off of milk for several weeks. She gave him artificial milk, made of soy-beans, instead. (Synthetic milk is often available in large grocery stores.) The change for the better was dramatic. After one or two experimental reversions to real milk, the boy announced he was convinced and would tolerate no more of his mothers experiments--no more real milk for him. I am inclined to urge all parents of children with learning or behavior problems--not just autistic-type children--to experimentally remove milk from the child's diet for 2 or 3 weeks. Use synthetic milk instead. If it makes no difference, change back.

Other foods which are commonly found to cause behavioral problems in vulnerable people include corn, oats, barley and other grain cereals, citric acid, chocolate and chicken (Dr. Walter Alvarez has written in his nationally syndicated medical column about learning disabilities in school children which result from eating chicken. Since the children typically ate chicken for Sunday dinner, and the problem was at its worst on Mondays, he called it the "Dumb Monday" problem). Unfortunately, the list of foods which can cause allergies of the nervous system is very long. Also unfortunately, the methods of identifying which specific foods cause the problem in an individual child are none too good. The usual skin-scratch tests ordinarily give no clue to food intolerances. There are methods, only partly accepted by allergists, which involve placing concentrated extracts of the suspected substance under the patient's tongue, then observing for such reactions as increased heart rate or the "psychological" symptoms of interest; this technique is called provocative food testing. I don't know how effective it is in finding foods which cause problems, nor if it gives misleading results in some cases.

Parents can do some detective work on their own, and many have. One important clue is that the offending food is often something the child craves. It seems strange, but the person almost seems addicted to the troublesome food, and tends to eat it on a regular basis. That, of course, makes it especially hard to find the cause of the trouble. The second clue is one that works only if the food is eaten only occassionally. For example, the "Chicken on Sunday" followed by "Dumb Monday" problem I mentioned before was easy to detect because the symptoms were not only interspersed with symptom-free periods, but occurred in a systematic way on certain days. Usually it's not that simple. Watch for periods of unusually bad behavior, then trace back for a day or so to see if anything unusual was eaten. You may find, for example, that foods or drinks containing cherries, or tomatoes, for example, have on several occasions preceded a severe behavioral effect.

This brings us to the third clue, or approach, to uncovering food intolerances, the loading test. Once you have begun to suspect a certain food, either because there is a craving or near-addiction to it, or because you have found behavior to worsen following its ingestion, you should keep the child away from that food entirely for at least ten days. See if his behavior improves. Then give him a large amount of the substance during two consecutive meals. You should be able to tell pretty well whether or not the food in question is the offender. If not, you try again on a different food, first eliminating it, then loading with it.

There is still another technique that the experts use, but it requires some sophistication. The technique consists of giving the child only one or two simple foods for a few days, starting with foods like rice and lamb, which are infrequently allergens. Then other foods are added, one at a time according to a careful plan.

Obviously, these procedures for finding food allergies of the nervous system can be difficult, but specialists are scarce and you may want to give it a try on your own. There are several good books I can refer you to. These are:

Theron G. Randolph. Human Ecology and Susceptibility to the Chemical Environment. (1962)

Frederick Speer. Allergy of the Nervous System. (1970)

Albert H. Rowe and Albert Rowe Jr. Food Allergy (1972)

All three are published by the C.C. Thomas Company of Springfield, Illinois.

Incidentally, I might add that I was fascinated by Chapter 24 of the Rowe and Rowe book. Chapter 24, which is on fever caused by food allergies, says that it is unrecognized by most physicians. In the files of ICBR we have case reports on several children with mysterious fevers. The parents have taken the children to various medical centers with no explanation ever being found. Could it be a food allergy--and, more important, could the food allergy also be at the root of the child's autistic behavior?

Remember, if you try any of the approaches described above, or have any information on these topics or related ones, please send it to our Institute. Our main purpose is to serve as a clearinghouse for ideas and information that might help our children. We need input from parents, researchers and physicians to be able to provide the most useful output. By working together we will advance the day we are all waiting for--the day when meetings like this are no longer necessary because we will have the knowledge we need to prevent or ameliorate the effects of autism and related disorders.

THE MOTT PROGRAM: COMMUNITY EDUCATION - SERVICES FOR EVERYBODY

Peter L. Clancy, Ph.D.
Associate Superintendent

During luncheon, your president and I had what was, for me at least, a very interesting and informative conversation. In the course of our conversation I asked the president what he thought formal education could do for autistic children and he replied that he thought perhaps the best it could do was to teach autistic children to get along with other children. He said that he thought that if the formal educational process could provide autistic children with the social skills to avoid being obstreporous, upsetting and obnoxious to others later on in their lives, then schools would have done a lot for autistic children as well as others. I told him that I was coming around to thinking that perhaps that ought to be the primary objective of all education for all children. And I don't say that entirely facetiously.

It seems to me that as our society becomes increasingly urbanized, mobilized, depersonalized, and dehumanized, we all begin to ask, "What happened to the old values such as respect for property, respect for Country, respect for others' rights, concern for neighbor, community pride, etc.?"

Without going into the complex causes of these problems (Alvin Toffler describes the causes pretty well in Future Shock) we here in Flint have come around to the notion that a new kind of educational institution can do much to provide the kinds of experiences and values that the family used to provide and no longer does. We call it the "community education concept" and in order to describe its function I have to spend a minute describing its origin.

In the middle '30s, Flint was a scruffy industrial town that had boomed into being with the explosion of the automobile industry. Birthplace of General Motors, home of Buick and Chevrolet, Flint grew from a sleepy carriage town of 11,000 in 1910 to a virtual tent-city of 160,000 in 1935. People swarmed to the city from all over the country and the world to earn the big-dollar on the assembly lines. With the crash of the '30s, these people from all kinds of backgrounds lost the only thing they really had in common--their source of employment.

Relative social chaos was the result. Flint "boasted" the poorest health conditions of any city in the state, the highest rate of traffic accidents of children, the highest high school dropout rate, the worst academic achievement records and the highest juvenile delinquency rate.

The juvenile delinquency rate was a particular concern of the school system's physical education and recreation director. From his position, Frank Manley knew just how bad it was. He had a hundred teenage boys on personal probation to him from the Juvenile Court.

Imbued with that concern, he spoke to the Flint Rotary Club one day in 1935 and gave the city fathers "hell" for the kind of community they were asking young people to grow up in. In the audience was multi-millionaire C.S. Mott, General Motors incorporator and founder of a Foundation designed to "help people help themselves." Later on, Mott said to Manley, "What if I offered to build a Boys' Club for Flint?"

Replied Manley, "Mr. Mott, it would be far better if you could get for our use the 35 "boys' clubs" we already have."

"What do you mean by that?" said Mott.

"I mean our 35 school buildings. They have gyms, auditoriums, shops, arts and crafts rooms, cafeterias--all the facilities you could hope for in a boy's club. Yet they're locked up tight from 3:30 on every day, Saturdays and summers, exactly during the hours when you would use a boys' club, anyway. Why not use what we have?"

Mott liked the idea and when he, rather than Manley, asked the school board for permission to use those facilities for that purpose, their response was, "Mr. Mott, that's a fine idea. How come no one ever thought of it before?"

The first year, Mott provided the school board with a small amount of money to cover the costs of the extra supervision necessary to operate five schools after-hours, Saturdays and summers ($5,000 per school per year). Response was enthusiastic; the second year saw ten schools in operation, the third year, twenty. After five years, all thirty-five schools were doubling as recreation centers and Flint was acknowledged to have the largest school-centered recreation program around. The Reader's Digest sent Roving Editor Paul Gallico to Flint to write the story for the nation of how this school-centered recreation program had reduced delinquency.

The trouble was, it hadn't.

Juvenile court and police records revealed little change in five years in delinquency rates in Flint. During the five year period in question delinquency rates in Flint had remained fairly stable.

There could have been some satisfaction with that because the town was turning over in population a great deal even at that time and maybe it was an accomplishment just to stay even in terms of juvenile delinquency and juvenile arrests. But those who were responsible, including Mr. Mott, a great many school principals and many dedicated citizens were provoked by that and took a harder, deeper look at what caused delinquency and what caused children to have difficulty in fitting into society. As you folks realize, I am sure, they discovered that youngsters are products not just of a recreation program, not just of a formal educational program, not just of classroom experience, but youngsters are products of the whole environment that goes together that we call community. Home, the conditions of the home, nutritional conditions, health conditions, mental and physical health in the family, housing conditions, values that are held up by their peers and their playmates, and values that are perpetuated in the community at large even by the public media. So this meant that if you are really serious about giving a youngster a chance to develop totally, as an educator you will have to face the fact that you will be involved in educating the community that educates the child--doing what is within the power of the school system to develop the child. Howard James published a book a few years ago called Youth in Trouble. He had been commissioned by the Christian Science Monitor to spend nine months traveling across the country making extensive case studies of young people who were incarcerated in penal institutions--reform schools and the like. At the conclusion of his study he offered a theory which you will hear about and which I think you will see dictates why we think the school system has to open up and be a lot more than a formal educational institution. James concluded that youngsters live in three spheres: the home sphere, the peer sphere and the school sphere. He concluded this is particularly applicable to people in their adolescence. His conclusion was that if a youngster is a failure in all three spheres, inevitably,--inevitably, the youngster becomes a delinquent. The one thing in common with all youngsters who were incarcerated was that they had failed in all three spheres. For many a youngster success in only one sphere was sufficient to keep that youngster out of trouble. To elaborate on that a little further: What he meant was that if a youngster had a bad home life or a broken home or whatever--and if he had no particular talent for getting along with his peers, no particular athletic ability, no music ability, no charm or looks or any of those things--and yet had the ability to succeed academically, he could be a success in the school sphere and probably would adjust and become a part of life. Another youngster could be slow academically and perhaps come from a broken home, yet get "self image" from some talents or skill that allowed her or him to be successful with his peers,--and that youngster could "make it." Still another youngster could be a failure academically at school and may not be gifted in any way so as to be successful with his peers, but have a good solid family that provided love and proper self-image, and he could "make it." But if a youngster couldn't "make it" in any one of the three spheres, he for sure, was headed for trouble.

We are now trying to give Flint a new kind of school--a structure which contributes in a big way toward solving the educational, social, economic and physical woes of the city. Time has shown how the "community education concept" is keeping pace with the changing demands of these troubled days. As much as that concept has expanded the traditional role of the schools in Flint, it became apparent that today's pressing urban problems require new dimensions in school planning.

We have developed a couple of pilot schools which are, in reality, total human resource development centers. Their function: to maximize the community education concept in such a fashion that every neighborhood school can better confront emerging problems. The new approach introduces a multipurpose neighborhood facility where a whole range of services are offered.... from adult basic education--including job retraining--to facilities for health and dental clinics. Space is also provided for the expressed interests of neighborhood residents, including senior citizens.

The whole purpose of such a facility is to coordinate and bring community-wide services closer to every resident.

We're convinced our idea is sound. Schools are public facilities. They are located within walking distance for everyone. They have communication with a great many youngsters. They cross racial and political barriers. And, they offer great potential for rallying community resources.

Our human resource development centers are going to take on as much as is practical in a leadership role to allow the community--at a grass root level--to examine its problems and aspirations, and then set for itself the kinds of tasks it needs to accomplish in order to build itself into an educative community. The kind of community that allows a youngster to develop to the limits of his capacity, and to develop itself to improve the quality of life in it.

This whole thing is difficult to talk about in a short time. It is an exciting concept that has spread across our nation, and has been adopted by more than 1,300 schools in hundreds of school districts. "Community school" has come into the language of educators both here and abroad who tell you it makes sense to use those facilities more than 18 percent of the time. They have discovered it makes sense to use such a public agency as a rallying point for all of the resources that are available, and that it makes sense for educators to get help from the community--where the child also gets his education--in order that they may do a better job in the classroom.

A former commissioner of education, Francis Keppel, once said: "Education is far too important to leave to educators alone."

We in Flint believe that, and are dedicated to just such a principle.

I invite you to visit our schools during your stay here if you have the opportunity. You won't have to be concerned about school hours--just drop in anytime, there is always something going on.

PROBLEMS IN THE MODIFICATION OF VERBAL BEHAVIOR

Stanley M. Sapon, Ph.D.
Professor of Psycholinguistics and Psychology
Director of the Verbal Behavior Laboratory,
University of Rochester

My presentation today has two main objectives: First, I want to provide a general introduction to my work in the Verbal Behavior Lab at the University of Rochester, and to make this introduction in terms of scientific orientation and approach, educational and ethical philosophy, and the rationale of my current program of activities. Second, I want to offer, in the context of this introduction, an analysis of a common problem and the demonstration of a fragment of strategy and tactics recently applied to this problem in my laboratory.

This is indeed an ambitious proposal for the period of time we have this afternoon and its ambition is made even more pretentious by the fact that the audience represents such a wide variety of fields of professional and personal interests. If I am to meet these expectations in any way, I will be obliged to be both telegraphically brief, and, for some members of the audience, redundant. For both of these abuses, I beg pardon in advance.

As its name indicates, the primary concern of my laboratory is verbal behavior, and my research for the past twelve years or so has been directed at the establishment and modification of verbal behavior in a wide variety of populations. It may be of interest to note that twenty years ago my concern was with the establishment of "foreign language" repertoires in college students. Since those days, the "age of interest" has grown younger and younger, reaching down to the newly-born, and the nature of the verbal behavior has shifted from second languages to a child's first language --- his native language.

I have heard my field of interest described as "teaching non-talking children to talk." Indeed, I am pleased to acknowledge that a four-year-old pupil of mine renamed the lab when he reminded his mother that it was time to go to "Dr. Sapon's Talking School."

In the interest of complete accuracy, it must be pointed out that all children begin as "non-talking children," so I must say that my work is concerned with all children, and with a special kind of behavior called verbal behavior.

If I seem to have begun my redundancy early with such frequent references to "verbal behavior," it is because it is a matter of major importance that we distinguish between verbal behavior and what is loosely referred to as "language." Frequently my attempts at irony are misunderstood and my signaled quotation marks don't go on tape recordings. For the record, let me make it clear at the outset, that for me, "language" is neither a useful nor desirable term. Let me begin with some contrasts and we'll see what kinds of differences emerge from the distinctions.

To begin with, behavior refers to what people do. Language refers to what people say. We find it perfectly reasonable to expect to bring about changes in the things people do and we accept the need and the possibility of establishing and modifying behavior. Language, however, is something that we are told has to "develop," (listen to the quotation marks), and then, "development" takes place only when the child has "reached the proper stage." This means, of course, if the child does not talk "because he has not yet reached the proper stage," we are obliged to wait until he reaches that stage, and wait, and wait, and wait.

According to a currently popular school of linguistic theoreticians and speculative philosophers, "language" is something that is "pre-ordained" as part of "human-ness" --- something so natural and inevitable that it is neither desirable, necessary, or even possible to teach to little children. This approach can be summed up in saying that if you are really a human being, your genes and your destiny will lead you to "use language" and to "build upon your innate sense of grammar." And if a child does not come to display this miraculous thing they call "language," it is indeed, too bad.

The term "language" can often lead us into a chain of non-productive thinking in that it sets off "language" as discrete from behavior, thereby excluding "language" from the valuable analytical and pedagogical procedures that have been derived from the science of behavior.

Far more damaging, however, than non-productivity, is a philosophical and theoretical position that declares, _a priori_, that research into the ways in which children are _taught_ to talk is irrelevant with regard to "normal" children, and a foolhardy effort with regard to children who are considered to be "impaired," "subnormal," or otherwise handicapped by some "linguistic deficit."

There is one final point of contrast to be made, and that we will later explore in some depth. For the moment let me refer to the fact that the ways in which people speak and read and write are often lumped together as different aspects of "the same thing," that is "language." "Lumping things together," however, is in polar contrast to the scientific activity that we call "analysis." Analysis means, of course, _taking things apart_, and a scientist is generally more interested, and more concerned with taking things apart and sorting them out, than he is with "lumping things together."

The more finely we analyze our subject, the _more_ differences we see, and the more likely we are to meet the scientist's expectations of successful prediction and control of the phenomena he studies.

We will have much more to say about the issues of prediction and control, but for the moment we can say that we have identified part of our area of interest. I interrupt here to tell you that from this point on I will be quoting extensively from a recently published book entitled _An Introduction to the Science of Behavior_ by Stanley M. Sapon.[1] I will not make specific page references, and I hope the author will forgive me if I just give a blanket acknowledgement to Chapter III. The subject matter we are concerned with here is BEHAVIOR, and behavior is defined as "anything that an organism _does_ that brings about a change in his environment." That definition also makes explicit the kinds of observations we will make --- what we will look at and describe --- and identifies the kinds of things we are concerned with predicting and controlling.

We are concerned with the ENVIRONMENT in which an organism MOVES AND ACTS, that is, the ENVIRONMENT in which he displays BEHAVIOR.

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[1] Monopress, P.O. Box 8341, Rochester, New York 14618, 1972, pp. 15-24

To be even more explicit, "we are actually interested in two environments --- the environment immediately before the behavior is displayed, and the environment immediately after the behavior. The differences between these two environments is sufficiently important to justify giving them two different names. The environment before the behavior we call the SETTING, and the environment after the behavior we call the CONSEQUENCE." At this point, you can see that we have identified three terms with which we talk about our subject matter. These three terms --- SETTING, BEHAVIOR, CONSEQUENCE --- also define what it is we will be observing and recording, and what it is we are concerned with predicting and controlling. The special importance of these terms is summarized in what I call the "Basic Principle for the Description of Behavior." If our overhead projector were handy, I could show you that this is written on three separate lines, and it looks like this:

> IN SOME ENVIRONMENT (SETTING)
> A BEHAVIOR IS DISPLAYED WHICH IS FOLLOWED BY
> A CHANGE IN THE ENVIRONMENT (CONSEQUENCE)

This Basic Principle permits us to examine empirically the relationships between each of the Terms, and provides the foundation for the Science of Behavior Analysis. If I sound excessively pedagogic or didactic right now, it is simply because the film that I prepared to show you today will make good sense only if I can describe it, and describe the strategy, the rationale and the tactics, in the terms from which the strategy and the tactics were derived. So you'll have to bear with this introductory lecture on the outlines of the science we're talking about today. We said the science was called Behavior Analysis. I identify myself as a Behavior Analyst, and I have been concerned with broadening the applicability and utility of my discipline.

The Basic Principle just given, leads us to examine every behavioral event in terms of three elements --- SETTING, BEHAVIOR, and CONSEQUENCE. This examination takes place in the form of actually writing down what we see, and this writing down is called a Line of Analysis. Each Line of Analysis consists of three parts, or columns, the description of the environment in which the behavior is displayed (the Setting) a description of the movements of the organism (the Behavior), and a description of the changes in the environment that follow upon the movements (the Consequence). What we will have entered into our Line of Analysis is the description of the Setting, the Behavior, and the Consequence. And they are written in three columns, left to right in a single line.

What concerns us, specifically, is the set of relationships between each of these three terms. I have found it useful to formulate these relationships as a set of Behavioral Laws. And we can cite, and briefly discuss, two of the laws now:

> THE LAW OF CONSEQUENCE states that the CONSEQUENCE that follows a bit of behavior changes, that is controls, the probabilities of the re-occurrence of that behavior.

We'll look at two examples of it in a simple expansion.

There are two kinds of Consequences:

1. There are those Consequences that increase the probability of the re-occurrence of a bit of behavior in a given Setting. These kinds of Consequences are called STRENGTHENING CONSEQUENCES.

2. There are those Consequences that decrease the probability of the re-occurrence of a bit of behavior in a given Setting. These kinds of Consequences are called WEAKENING CONSEQUENCES.

We are all familiar with this kind of effect; we've seen it constantly; we may not have identified it as precisely as this.

If we see a little girl walk into the kitchen and proceed to pull open one drawer after another, and she gets to the third drawer and pulls it open and we see that there is now a lollipop in the drawer, which she takes out and eats, we can describe this event in the three terms we've talked about. We can say that

In the Setting of the kitchen with the drawer fronts
    and knobs being present and the little girl,
The Behavior of the pulling open the drawer is followed by
The change in the environment of the appearance of the
    lollipop.

We would then venture to guess, and we can determine whether this is true or not empirically, we can venture to guess that the appearance of the lollipop and the eating of the lollipop is a Consequence following upon that piece of drawer-opening behavior that increases the likelihood of this little girl pulling open the drawer the next time she is in the Setting that contains kitchen drawers. If indeed we watch the next time this child enters the kitchen, and she makes a beeline for the third drawer down from the top, and pulls it open, we can conclude that the Consequence that followed upon this behavior the last time the child was in this Setting was indeed a Strengthening Consequence.

For an example of a Weakening Consequence, we don't have to go too far. There's a common sort of thing, too common, I fear, an event that we see with little children. If you can imagine now, a child crawling across the floor with a bobby pin in his hand. And he's been poking the bobby pin in all sorts of nooks and cranies and crevices. Now we find:

In the Setting that contains a bobby pin in the hand,
    and a couple of oddly-shaped holes in the wall, we
    see
The Behavior of poking the bobby pin into the hole in the
    wall, and
The change in the environment that follows this piece of
    Behavior is written in the comic books as "Zap!"

Now we have seen a complete behavioral event described in three terms. The question is now: The kind of Consequence that followed upon that behavior --- was that a Strengthening or Weakening Consequence? We don't make this as a "decision;" we observe what happens. We will presume that our youngster has survived this experience. The next time we see him in the living room with a bobby pin in his hand, he approaches the wall with the oddly-shaped holes in it, and we see that he turns sharply, 180°, and moves rapidly away from the hole in the wall.

We can now conclude on the basis of this observation that the Consequence that followed upon the behavior of poking the bobby pin into the hole in the wall when the Setting included being on the living room floor with a bobby pin in the hand and the hole in the wall was, indeed, a Weakening Consequence. It is extremely important to mention all three of the Terms as we go, and although it may make for some clumsy sentences, we will soon see why this is extremely important.

The Law of Consequence, as we said before, focuses on the relationship between the probabilities of re-occurence of a bit of Behavior and the Consequences that follow upon that Behavior.

Now, there is the second Law that concerns us and it is called the Law of Setting and it indicates still another relationship.

THE LAW OF SETTING states that:

> THE NATURE OF THE SETTING CONTROLS THE PROBABILITY OF THE DISPLAY OF A BEHAVIOR.

This Law is demonstrated in two ways and we have already seen it. We can dig it out of the two examples just given:

> The first demonstration says when a Behavior displayed in a given Setting has been followed by a Strengthening Consequence, the re-appearance of that Setting increases the probabilities of the display of that behavior.
>
> or,
>
> When a Behavior displayed in a given Setting has been followed by a Weakening Consequence, the re-appearance of that Setting decreases the probabilities of the display of that behavior.

That is, the kitchen and the kitchen drawers have now become the occasion for an increase in the probability of opening drawers. We observed, first, that when in the kitchen, the behavior of opening the drawer was followed by the appearance of the lollipop. We now find that the kitchen as the Setting increases the probabilities of the behaviors of pulling open drawers. Conversely, in the case of the youngster with the bobby pin, and the living room and the wall socket, we see that when the youngster comes into the Setting, the probability of putting the bobby pin in the hole is markedly decreased by virtue of the prior history of Consequences that we have observed and recorded.

What I have said so far appears both brief and simple. It represents, however, a complete and accurate description of the fundamental principles of the science. I have identified what it is that we consider as our data, and what it is that we are interested in both predicting and controlling. What it is that we are concerned with, what we mark as our data, are accurate descriptions of

THE SETTING, THE BEHAVIOR, AND THE CONSEQUENCE.

We avoid like the plague, any terms that suggest "explanations" for what a child does, as we avoid words, classifications, or diagnostic labels that imply an answer to the question "Why does he_________?"

We will have occasion in a few minutes, when we look at a case of what is labeled "echolalia," to go somewhat deeply into the long-range effects of "explanations," but we can make this much clearer right now: Attempts to "explain" the "causes" of behavior lead directly into a circularity that goes around and around and around. At some point in the circle we are obliged to touch reality and make reference to a bit of observed fact --- data --- but we touch it only briefly as we race along the circular track. Here's a little piece of dialogue with snide comments on the side. "I see that this child is biting his nails." (Observed fact.) "Why is he biting his nails?" (Deadly trap.) "He is biting his nails because he is 'anxious." (Explanation.) "How do you know that he is 'anxious?' What evidence do you have to support your explanation?" (Reasonable question.) "I see that this child is biting his nails."

Having laid out the track, we can now run in circles forever. If we become impatient with the monotony, we can introduce another ring into the Explanatory Circus, and ask "Why is he anxious?" But this question is already different from the first one. The first one, mind you, started with a bit of observed fact --- any one can see the child biting his nails --- and then it moves on to "explanation." This question does not begin with observed fact, and never comes near a bit of data again. If you ask why he is "anxious," you might be told that he is "anxious" because he is "insecure" in school. If you ask why he is "insecure," you may be told it is because he "has a poor self image." If you ask why he "has a poor self image," you may be told that it is because he is suffering from "something else." But whatever that "something else" is, that is presumed to be "the reason why," you may be sure it will not be something that you or anyone else can observe. It will only be one more "explanation" in a growing number of circles. And none of these "explanations" are likely to specify a series of concrete steps that will bring about a change in the original problem that occasioned the question in the first place.

I see my contribution, not as an "explainer" of undesirable behavior, but rather a changer of behavior. What it means to be a "changer of behavior" can be more clearly seen when we touch on the last major item of our introduction.

There is one extremely important word that appears with very high frequency throughout this paper --- the word is "CONTROL." Now, there is probably no word more widely used and more generally misinterpreted than the word "control," with all the vision it conjures up of people "being controlled." When we use the term control we mean that some property of either the Setting or the Consequence has acted to bring about a change in the probability of occurrence of some behavior. When we talk about Strengthening Consequences we mean those Consequences that act to increase the probability of occurrence of some bit of behavior. We then talk about "Consequence Control." This means nothing more or less than the change in the probability of the display of some behavior that is brought about by the nature of the Consequence that followed that bit of behavior the last time it was observed to occur. When we talk about "Setting Control" we refer to the fact that the nature of the Setting acts to either increase or decrease the probability of occurrence of a given bit of behavior.

The notion of "control" goes beyond describing the changes in probability that are brought about by special properties of either Setting or Consequence. The term takes on further value when it is used in the context of our undertaking to manage or arrange Settings and Consequences in such a way as to change the probabilities of the display of some behavior.

Whenever it becomes possible for us to predict that certain properties of the environment make it highly likely that some bit of behavior will be displayed, we are close to being able to arrange the environment so that the behavior in question becomes more likely to be displayed. This arranging is a form of control.

If your observations of a given child lead you to predict successfully that when he is near a table that has a plate of cookies on it, there is a high probability that he will move to the table and eat the cookies, you are now in a position to exercise control over the child's cookie-eating behavior through your management of the Setting. You can increase the probability of the child's eating cookies if you see to it that there is a dish of cookies on the table when he comes home from school. Your exercise of Setting Control may very well be toward a different objective. If it should be important to limit the amount of sweets in his diet, you can very well see to it that cookies are not a part of the Setting that the child enters when he returns from school, thereby decreasing the probability of eating cookies. Parents frequently exercise Setting Control over the behaviors of touching delicate glassware. If their observations lead them to predict that the presence of a glass figurine on a coffee table increases the probability of the toddler's grasping and dropping behavior, then they are likely to manage the Setting by keeping such breakables on high shelves.

We exercise Consequence Control when we arrange things so that a Strengthening Consequence follows upon the display of a bit of desirable behavior, that is, a bit of behavior whose probability of re-occurrence we would like to see increase. When the child, at bed-time, is seen to put his dirty socks in the clothes hamper, and we consider this to be a bit of behavior that is desirable, in that Setting, we are likely to say things like "Thank you!" or "You're a really big helper!" Our expectations would be that we had strengthened, that is, increased the probability of, the display of that piece of behavior in that Setting.

You will have noticed that none of the descriptions or references to a child's behavior have failed to include mention of all three terms. We have never talked about the middle term --- the muscle movements of behavior --- without making reference to the Setting and the Consequence that preceded and followed that behavior. It is crucial to our successful prediction and control that we never consider anything less than the *complete Line of Analysis*, describing and specifying *all three terms*.

We can only talk meaningfully about what our pupil does when we have described the *Setting* in which a described set of movements --- the *Behavior* --- is displayed, and the changes in the environment that followed that behavior, that is, --- the Consequence. We'll have a chance to talk more specifically about why it's so important to mention all three every time we talk about behavior.

We have had a rapid run-through of the principles that direct both the analysis and modification of behavior. It has been very brief, but it has been, nevertheless, complete and accurate. There is, of course, a vast inventory of subtleties, strategies, tactics, and techniques that have come into being during the last twenty years of work, but I can assure you that there are no "special cases;" there are no "exceptions" in which the stated principles of behavior do not apply exactly as given here.

We can conclude our introduction now by defining in our new terminology that it means to be a "behavior changer." It is, of course, nothing less than being a *teacher*. I have come to define a teacher as a person who undertakes the responsibility of managing and arranging the environment in such a way that his pupil comes to display new and desirable forms of behavior. When he takes this responsibility he surrenders the right to explain away his lack of success by attributing it to some special deficit or inadequacy on the part of his pupil. All he can say in such a case is that he has not yet been able to adequately analyze the problem and to bring his pupil to perform as desired. The special set of rules for teachers in my laboratory declares it "foul play," for example, to set out to teach a youngster to read, fail to do so, and then say you couldn't teach him because he "was not yet ready to learn to read." Our rules say that if you accept the responsibility of teaching, you cannot claim credit for your success, but blame failure on some other organism's inadequacy. This is a very demanding set of criteria for a teacher, and yet it is the only one that I think generally describes what I think a teacher should indeed be. It is absurd to say that "I am a superb teacher. It just so happens that my pupils don't perform brilliantly, but that's because there's something wrong with them."

It must also be pointed out that all those who apply the principles of behavioral science in the area called "behavior modification" do not share the same approaches, nor do they necessarily adopt the same strategies. Although all tactics represent an attempt to exploit the same set of scientific principles, there is a tremendous variation in the actual realization of these principles -- a range that runs from great subtlety all the way to the crudity of electro-shock and other aversive controls.

Having spoken for a minute about some of the general principles that direct our teaching, let me describe the physical environment in which our work takes place. And the description of the environment carries us further into the issues of strategy and rationale. Two extremely important rooms in the laboratory are called the Observer Room and the RABbit Room. The RABbit Room needs to be explained, the Observer Room should be fairly obvious. The Observer Room is a room in which we can see and hear what takes place through a one-way glass screen and in which we make videotape and audiotape and recorded oral descriptions of the activities that take place in the RABbit Room.

The RABbit Room does not mean that we have a small branch of the Playboy Club in Rochester. RABbit Room is spelled in a bizarre fashion. It's R-A-B-b-i-t. We call it RABbit because it really represents a kind of short-hand for a notion. "RAB" stands for Requisite Antecedent Behavior. And "bit" means just what it sounds like --- small fragment. When we set out to establish some elaborate or complex behavior in a child, one of the first things that we are obliged to do --- if we're going to avoid casting blame on the child's lack of readiness --- is to carefully examine what are the Requisite Antecedent Behaviors before some teaching program can begin to establish the novel behavior. This process of analyzing a complex behavior in terms of its Requisite Antecedent Behaviors leads us to use this room to establish "bits" --- tiny fragments --- of these RAB's. So this room is the place in which we establish RAB-bits. This actually describes a good deal of the teaching rationale and gives some foreshadowings of the kinds of strategy that we use. Within the RABbit Room there are a number of special items, both of furniture and apparatus. Before I describe the furniture and apparatus, it occurs to me that I can really now give you a capsule, highly accurate description, using our new technical terminology, that tells us exactly what a RABbit Room is. We can now say that the RABbit Room is a space in which it is possible to exercise extremely careful control over many properties of Setting and Consequence, and thus it is a room designed to be maximally effective for bringing about changes in a child's behavior --- that is, teaching.

The RABbit Room is essentially a bare room, it is not adorned, it does not have pictures on the wall, we do not have turtles in bowls nor do we have canaries and parakeets, nor do we have models of the moon or astronauts' helmets or the 9,000 other things frequently seen in teaching-spaces designed for children. We are content to live without the problems of "How can I get him out of the turtle bowl when I want to give him a reading lesson?" We employ very simple and direct Setting Control. We have no turtle bowl, we have no parakeet; we have a table and two chairs, and we have a set of special apparatus. I'll give you the names of three of them and briefly describe how they work. Three frequently used pieces of apparatus are the things we call the Movie Box, the Twinkle Box, and the Slide Box. These have been described elsewhere, some of you may have seen reference to them in other publications.[2] The Twinkle Box is a device that presents approximately three seconds worth of audio-visual display of flashing-on-and-off green and red star patterns accompanied by clicking noises, and all of this action takes place when you drop a metal token into a slot on top of the device. Following the display of light and sound, the box is inactive

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[2] Cf. for example, IRAL (International Review of Applied Linguistics in Language Teaching), "Contingency Management in the Modification of Verbal Behavior in Disadvantaged Children," Sapon, Stanley M., Vol. VII/1, February, 1969, pp. 37-49.

Problems in the Teaching of Young Children, "Engineering Verbal Behavior," Sapon, Stanley M., Toronto, Ontario: The Ontario Institute for Studies in Education, 1970, pp. 83-100.

Monograph Series on Language and Linguistics, "Shaping Productive Verbal Behavior in a Non-Speaking Child: A Case Report," Sapon, Stanley M., A paper presented at the 17th Annual Round Table, Institute of Languages and Linguistics, Georgetown University, Number 19, 1966, pp. 157-175.

"'Receptive' and 'Expressive' Language," Sapon, Stanley M., A paper presented at the 1965 Meeting of the American Psychological Association, Division 7.

and it will not do anything again until you put another token in the hole. There is the Movie Box which is a device resembling a television set which will present an eight-second segment of an animated cartoon or of some other form of movie. After the eight-second display, the screen goes blank and stays blank. Whining, kicking, grunting, hair-pulling, lying on the floor, nothing makes the movie go on except dropping a token in the slot, whereupon it goes on instantly, and runs for eight glorious seconds before it shuts off. The Slide Box presents a projection of a color slide upon insertion of a token. The slide stays on the screen for five seconds, following which, the screen goes blank, and will turn on and present the new slide only upon insertion of the next token. The most important piece of apparatus in the room sits on the table between the child and the teacher. This device, of course, is the Token Dispenser. It seems to operate by magic. There's a foot pedal on the floor right under the teacher's left foot and whenever he presses on that spot of the carpet a token pops out of a colored panel onto the table in front of the child. The token is the necessary condition for the operation of any of the devices. All you have to do to "have fun" is to have a token. All you have to do to get a token is to sit down at the table and meet the contingencies --- the requirements set by the teacher. What is so special about this as a teaching room is that it turns out to be never impossible or even difficult for a child to acquire a plentiful supply of tokens. The demands made are always just within the range of probabilities observed in the child's behavior. And this range of probabilities shifts ever so slowly and ever so subtly as time goes by. But the child never is left without a token after he has come back to the table. That is, the teacher makes contracts that the child is very, very likely to fulfill. We are dealing again with issues of probability. When the teacher predicts that there is a high probability of the child making eye contact with the teacher for as much as a tenth of a second, then, a token is contingent upon a tenth-of-a-second worth of eye contact. When a tenth-of-a-second worth of eye contact becomes a high probability behavior, we find that a hundredth of a second is added to the cost of a token. There is, of course, a very, very high liklihood that one case of eye contact will exceed the tenth-of-a-second standards and, of course, this special case is followed by a token. In this manner we move ahead slowly.

We have, at this point, described some of the basic procedures we work with, both apparatus, and the principles of management. What the teacher says and does, the contracts he makes, and the contingencies he establishes represent kinds of Setting Control. The appearance of the token provides a kind of Consequence Control.

This is crude and simple. Our procedures become much more elaborate, tokens are not immediately picked up and consumed, they eventually get stored, they eventually get put in boxes, they eventually get pushed to one side while the youngster gets on with the really exciting business of what's happening in the RABbit Room. But you now have at least a brief outline of the basic approach.

I have to tell you something about the population of children we work with. All I am prepared to say (and hot irons will not make me change my description) is that we work with children whose verbal behavior is found to be functionally inadequate. I will not tell you the long list of diagnoses that come along with the case histories, having made, I hope, a very telling point about how and why we stay away from explanation. I'm obliged to indicate that 99.9 % of all diagnoses consist of explanations. And explanations as we have said before, do not ordinarily carry with them a set of implicit instructions as to how to solve the problem. Diagnoses beget diagnoses which beget further diagnoses which beget further diagnoses, and so on, ad nauseam. We work with youngsters who enter displaying functionally inadequate behavior --- they either do not talk at all or they do not talk well enough. Whether they do not "talk at all," or do not "talk well," they have been identified by their parents, their teachers, by other members of the community as not performing in accord with the expectations of the verbal community. Our task is not to find out "why" it is they do not perform to expectations; our task is to devise procedures to teach them to perform more closely to expectations. The teaching program begins with, as we said before, a careful analysis of what we actually see. We describe the Setting in which the child makes some movement with or without sound and the Consequence that follows upon that kind of Behavior. We are specifically concerned with observing the chain of behavioral events --- a behavioral event being a complete Line containing all three terms. We are concerned with behavioral events that take place outside the laboratory, at home, in other clinical settings, in schools and so on and so forth. These are matters of less interest, but still germaine to our concerns. Our primary concern is with establishing novel behavior in Settings and followed by Consequences that we manage.

At this point, I think, we are ready to move on to the discussion of the videotape. The film shows a six-minute segment of a work-session with a three-and-one-half-year-old boy. I won't say anything about diagnosis, but I will say a few things about what other people have said about him as they describe David's behavior.

His mother said that his "development was slow, he did not walk until he was 18 months old; by the time he was two he had been observed to say 'Da-da' and 'Ma-ma,' but he had not yet begun to feed himself." And so far these are descriptions of behavior, but they're incomplete; they tell us nothing about Setting and nothing about Consequence, they only tell us about the middle term.

The neurologist reports that, and now we're beginning to get fuzzy because we drifted away from data --- half of the neurologist's sentence is data and half of it is ...... I'll tell you what he said, "David always seems to be living in a world of his own most of the time" --- that's not data --- "sometimes watching his hands and making repetitive movements" --- that's getting warmer, but that only tells us the middle term, "dropping things repetitively, such as pencil and paper, repetitive shaking of his head...etc., etc." There are some fragments of descriptions of behavior, and of course, that woeful piece of impression, the poetic metaphor which is actually powerfully destructive --- "Seems to be living in a world of his own." But we have nothing that really resembles a description of behavior because we've only got the middle term. The youngster was examined at a Hearing and Speech Center and, this is interesting, because the examiner is embarrassed about reporting data, it's kind of fudged delicately. It says: "The examiner feels that David is exhibiting a severe delay in speech and language development." I don't know how she got that feeling. "Social development, motor coordination, and perceptual skills also appear delayed." Not a word of that, incidently is behavioral; it sounds like it, but it's not. Motor coordination is an explanatory term. "Motor coordination" is what you have to have in order to account for the fact that you don't drop things. If you pick something up and you don't drop it, and you say, "How come when I pick something up I don't drop it?" And the answer is "that's because you have motor coordination." "How come I have motor coordination?" and off to the circus we go. And the same holds true with "perceptual skills." "Perceptual skills" are a set of skills used to explain how come it is that some behaviors are observed, and the lack thereof explains how come other behaviors are not observed. That's all I want to say about his medical and behavioral history and the like, except to move on for a moment to a description of a kind of a problem that we saw with David.

David's mother described the problem very succinctly; she said, "David is a mimicker; David never says anything on his own. David only imitates what people say. He's a parrot. David really doesn't know what anything means." Of course, this is what she described to the professional who listened very carefully and said, "Oh, yes, there's no question about that, this is a classical syndrome. You son is suffering from what we call echolalia." And the mother said, "Oh, wow!! How do you know he's suffering from echolalia?" And the professional said, "Because he repeats everything that he hears people say. That's a sign of echolalia." The mother is a nice lady, but I still can't print what she said. One of the problems has to do with echolalia as an explanatory term --- actually it's a descriptive term that's offered as an explanatory term. Echolalia describes something of the child's behavior. It even tells you two-thirds of what you need to know. It tells you something of the Setting and something of the Behavior and a whisper of the Consequence. It says that when the Setting contains somebody who talks and says something like "What do you want, David?", that there is a high probability of David saying "What do you want, David?" And if you say, "Want to go for a walk?", David is likely to say, "Go for a walk?" But the third term is not even guessed at, certainly never described. It would have to be described for each individual event and that's time consuming and expensive, but it only costs twenty dollars to swap "He imitates everything I say" for "He's suffering from echolalia." The mother got a bargain. And now, of course, we have the big question: How do we cure his echolalia? Now we get into some really rough issues of "How a set of explanatory terms does or does not contribute to the solution of the problem." If the problem is really described as "he imitates everything somebody says," what's the first thing we have to do? We have to get him to stop imitating. The other half of the problem is that he "never says anything on his own," well the solution to that is easy: We have to get him to start saying things on his own. And that really doesn't help us much. If you were to attempt to seriously weaken the probabilities of David's saying anything in the presence of somebody else's speech, you would also decrease the probabilities of David saying anything, anytime, anywhere. This is not a good set of antecedents from which to begin to increase the probability of David speaking appropriately. This turns out to be a total strike-out. Let me try another way. Let's have a go at the problem, not in terms of explanation, but in terms of a behavioral description that gives us all the information we need.

We have to describe the Setting in the following way: When the Setting contains David and another human being, and a set of sounds, there is a high probability that the muscle movements of David's mouth and articulatory organs will produce as a Consequence, a change in the environment, a set of sounds that resembles the set of sounds that were present in the Setting. We need a second Line. When the Setting contains the set of sounds produced by David's muscles there is now a high probability that an adult will say, "Stop imitating me." or "Knock it off." or "That's what I said." And this now has to read out as another set of Consequences that follow upon David's reproduction of sounds that were present in the Setting. We have one set of problems that frequently occurs in children with inadequate verbal behavior and that is they do not move the muscles of their mouth, lips, tongue, jaws, diaphragm, etc., etc. to produce a set of sounds that people will call "speech sounds." This of course, would be a problem in the middle term. This would be a problem now in specific movements of muscles, which we do not observe and which we must observe. We do not have this problem with David. David has no problem with regard to the middle term. Where is the problem with regard to David? The problem with regard to David is in terms of the special relationship between the Setting and the Behavior. What we see now is: "Do you want some juice?" What does David say?" "Some juice." That's what we hear now. That's echolalia. What do we want? We want to bring this to the point now where the Setting contains the teacher who says, "What do you want David?" And David says, "Some juice." Now there is no difference in what he said the second time and what he said the first time. That's absolutely perfect performance. In both cases he said, "Some juice." The Behavior is identical, except that there is a prominent difference in Setting. The first time his muscle movements produced a parallel equivalent to what was present in the Setting, and the second time the muscle movements are now under the control of different properties of the Setting. If we look at this a little more closely, we also see that there is a difference in Consequence. In the first instance when an adult says, "Do you want some juice?', and David says, "Some juice?", the adult is likely to say, "Oh, for God's sake!" (or something stronger.) In the second case we have the Setting: "What do you want?", and David says, "I want some juice." What's likely to take place there? He gets a glass of juice. That is likely to be a Consequence that will strengthen the Behavior of saying "Some juice," in the Setting of "What do you want?" when there is also a glass and a jug of juice present. Now we have come to describe the "Line of Behavior" that we talked about. We have described the problem now as one in which the Consequences that follow upon inappropriate Behavior do not change that Behavior, do not improve that Behavior. Another way of saying this is that: When a Behavior is inappropriate with regard to the Setting, it is not likely to be followed by Consequences that will strengthen (increase the probability of) the display of desirable, appropriate Behavior. Now we are not going around in circles, we are actually looking at that same problem from three different vantage points and it becomes now very, very clear what our task is. Now what are we going to take a look at in the film? You are going to get a special kind of Saponian teaching technique. I'll let you in on the secret. I'm going to tell you what you are going to see, then, I'm going to let you see it, and then I'm going to tell you what you saw, and then I'm going to let you see it again. And when we get through with it, by George, everybody will have really and truly seen what they're supposed to have seen. We're not taking any chances. Let me tell you what you are going to see: You are going to see the application of a set of strategies. The tactics are very simple. The strategies are another way of talking about objectives and the way of structuring and arranging objectives so that they follow naturally one upon the other. Tactics are the actual procedures that we will use and they will vary from moment to moment, from day to day, from child to child, to bring these strategies to life --- to realize them. In this case, we're going to see the situation in which David, as the film opens, is just coming to the end of looking at a sequence in the Movie Box. The Movie Box display comes to an end and I invite David back to the table. When he gets back to the table there is a glass full of juice and an empty glass. What happens is presented as Lines of Analysis:

SETTING	BEHAVIOR	CONSEQUENCE
Movie Box display ends; David returns to table; full juice jug; empty juice glass on table; "Do you want some juice?"	David says: "Juice."	Teacher says: "Some juice."
"Some juice."; David and teacher at table; Teacher holding full glass in his hand.	David says: "Some juice."	Teacher says: "Great! and pours him a sip of juice; David drinks juice
Teacher takes glass back and says: "Some juice."	David says: "Some juice."	Sip of juice

This goes on. There is a third Law of Behavior that I did not tell you about. It's the only one I left out. It's called the Law of Strength, and it says:

> THE PROBABILITY OF THE DISPLAY OF A GIVEN BEHAVIOR INCREASES IN ACCORD WITH THE NUMBER OF TIMES THAT BEHAVIOR HAS BEEN DISPLAYED AND FOLLOWED BY A STRENGTHENING CONSEQUENCE.

In other words, what we are doing now is increasing the probability of David saying, "Some juice." when the Setting includes a number of discrete and important parts; me (I'm the teacher in the Setting); the juice cup held up in the air; an empty mouth; and my words "Some juice." We have identified four parts. Now the strategy here is going to be to increase the probability of David saying, "Some juice," in the Setting containing four parts --- me, the juice glass, the empty mouth and the words "Some juice." When this comes to strength I will modify the Setting slightly. I will change the Setting by having everything the same except for the words "Some juice." I will now have: "What do you want --- some juice?" And that's what David is going to say, "Some juice." This is now strengthened because it's going to be followed by sips of juice, and then, guess what I am going to do to the Setting. You can work the strategy yourself now --- I'm going to hold up the cup. David's mouth will be empty and I'll say, "What do you want?" And what do you think he's going to say? "Some juice." That, of course, is "Happy Day!" because that is now a fully appropriate Line of Behavior. He doesn't say, "What do you want?" We go even further in this little six-minute segment. Something else has been happening that you don't know about, but I'll tell you now. We've been working at the Movie Box and at the Movie Box we have been working with the phrase "I want." And we've been working this with "I want a token.", "I wanna see the movie." "I want" is now regularly under the control of the Setting that contains the words "What do you want?" He says, "I want." You'll watch something beautiful happen in this six-minute segment, because after we increase the probability of saying "Some juice." in the presence of "What do you want?", I say, "What do you want?" and he says, "I want some juice." By the time the little film is over we've gone beyond this, and we've gotten something really sweet and natural out of it. He finishes the little sip of juice --- I'm giving him small doses --- he finishes the sip of juice, looks in the empty cup --- and now the Setting is different: Empty mouth, empty cup, eyes aimed toward the empty cup, he raises his head, he gives me the cup, and says, "I want some juice." This is not in the presence of any adult speech at all! And it's from that point on that I sit there with my mouth very, very carefully closed, while David drinks the juice, looks at the empty cup, slurps the last drop out, and then hands me back the cup and says, "I want some juice." And this is where we close our segment. We will go on beyond that, but I want you to watch it now, just simply for a quick run through, and then while it's rewinding we can go back and talk about some of the things that we actually saw.

*(FILM SHOWN)

You see some of the special details of how it happened. There are a couple of interesting points along the way. To begin with you will watch and see that the teacher modifies his performance

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*Film unavailable, a casette tape of the session can be obtained by writing to NSAC, 621 Central Ave., Albany, N.Y. 12206.

according to what the youngster does. This is not a machine that operates blindly. It follows some very, very specific procedures. There are two very, very prominent cases in which the teacher's role in presenting the Setting shifts according to the child's performance. Early in the game I ask for too much too soon. I want you to see where that happens. That's the clue I'll give you. I asked for too much too soon and I change; remember I said before that you must never ask for anything that exceeds the probabilities of the child's behavior at that moment. You want the most exceptional case of the child's probable behavior, but it must not go beyond the limits of the probability. In one case there, at least one, probably two, you'll see where I ask for too much, and promptly change the Setting so that a Behavior appropriate to that Setting would be likely to be displayed, and therefore would be followed by a Strengthening Consequence. There's another rather prominent example along the way in which I exercise Setting Control by moving something other than my mouth --- I hold up the cup in front of David's face. You watch for that one! (Although a lot of people saw that the first time through.) It's funny, but watch it a second time, recognizing now that the way this is described is crucially important. I am not "getting the child's attention." That's a descriptive explanatory idea, and not an actual behavioral description. I am changing the Setting in such a way as to increase the probabilities of some specific behavior. And, of course, there's a third point that can be looked at on this, and this is also a matter of extreme importance. I want you to count the number of times that David displays a piece of verbal behavior that is fully appropriate to the Setting and is followed by a Strengthening Consequence. The entire film is exactly six minutes long and the action that I'm talking about does not start immediately, but from the point that David first displays a piece of verbal behavior that is considered to be solidly appropriate, on through to the end. I want you to count how many times that happens and if someone has a stopwatch or a sweep second hand, I'd like him to push his button at the moment that David makes his first fully appropriate display of verbal behavior. We'll find out how many minutes transpire and how many occasions have appeared for the display of appropriate, and thereby strengthened, pieces of verbal behavior.

Here's an opportunity to say one more thing, to restate one more thing. We said before that we were going to make a special point of underscoring why it is important to give all three terms. We've observed before, and this, of course, is common experience, that almost everything that passes for behavioral description rarely gives more than two terms of the behavior. Most events are told only with reference to the middle term. We get all sorts of things like "The child doesn't know how old he is." Is that a description of behavior? I see an awful lot of it. "The child is unable to string beads." "Doesn't know," "is unable," "cannot," are not terms that describe behavior. "Doesn't know" is an explanation. The examiner said, "How old are you?" The child looked out the window. The examiner said, "How old are you?" He said, "Two." (The examiner knows he's six.) The examiner says, "Come on now, don't fool around. I know you're teasing me. How old are you?" He says, "Three." The examiner writes down, "Does not know how old he is." That's charitable. Now what this means is that in the presence of the question "How old are you?", the Behavior displayed was not that which was considered appropriate by the examiner. It was not an oversight because it happened twice. The first time you might be charitable and say, "The child didn't really understand the question." Now what can you tell me about Setting, Behavior, and Consequence in the little story I just told you? The examiner says, "How old are you?" The child looks out the window. The Setting, Behavior --- what's the Consequence that follows looking out the window? The examiner says, "Come on now, how old are you?" Behavior --- the child says, "Two." Consequence --- the examiner says, "Come on now, don't tease me. Tell me the truth." That's the Consequence and also the Setting for the next Line of Behavior. And the behavior was "Three." What can you say about the Consequence of "Come on now, don't fool around, let's not tease." What kind of Consequence is that? Weakening or Strengthening? Well, you're evenly divided. "A Strengthening Consequence is that Consequence that increases the probability of the re-occurrence of that Behavior in that kind of Setting." So it turned out to be a Strengthening Consequence. How do we know? Because the next time the Setting re-appeared --- the examiner says, "How old are you?", the child said, "Three." And if the examiner had said, "Oh, you're a rascal now, how old are you?" What will you bet? "One," "Four," "Eleventeen." You name it. And the same story might very well happen if the examiner said, "No nonsense, you stop fooling around this minute. Any more flippant behavior out of you, young man, and you're gonna get it. How old are you?" And he says, "Three." What would you say about that stern, angry Consequence --- Strengthening or Weakening? Strengthening. That is, whether a Consequence is Strengthening or Weakening is not determined by how we "feel" about it, or what we predict it will do, but is rather determined by what we observe --- what changes take place in the probability of the Behavior when that Behavior has been followed in the past by a specified and described Consequence. We're looking for three pieces of data now. Look at it on a Line by Line basis now, keeping in mind that you are going to be asked to describe in some detail: What the Setting is; How the Setting changes; Where the teacher asks for too much, and How the teacher changes the Setting, and we will also be counting and timing.

FILM re-run

There were four minutes worth of behavior considered to be appropriate in the sense that it existed in the proper relationship with the Setting, and the shape of the muscle movements, and the Consequences. There were four minutes worth of appropriate behavior out of a six-minute segment which means that two minutes was spent in establishing a given Behavior under the control of some properties of the Setting and shifting them so that we begin to see fully appropriate Behavior after two minutes of shaping. How many occasions were there? "Ten." Ten occasions in the four minutes. What is the rate? Two and one half per minute, except for the fact that I'm afraid we'll have to subtract some time from the four minutes because out of the four minutes and the ten doses of orange juice, we lost about a minute and a half in the actual consumption of the orange juice. This means we had ten pieces of appropriate Behavior in two and a half minutes of time. How does that strike you as far as a classroom Setting is concerned? The rate is incredibly high compared to any kind of ordinary teaching situation. I make a special point of this. People sometimes say a one-to-one Setting is not economically feasible. It happens to be the only Setting that happens to be behaviorally feasible. If it is too expensive to do things that work, we don't really make much progress by doing lots of things that don't work, but that we can at least afford.

Well, I'd like to put in my two cents worth on the issues of economies and the relative costs of teaching. This is a one-to-one teaching Setting and as we said before we have ten solidly appropriate performances in about two and a half minutes of really live working time. This is a way of comparing a Setting like this in my RABbit Room with what happens in the outside. It rarely happens that we have the opportunity to exploit the Law of Strength, which I told you about before, in the outside world. That is, the possibilities of having the same Line of Behavior written and rewritten and rewritten ten times in a row or fifteen or twenty times in a row, in a Setting other than one which is very, very specifically designed for this kind of work, is low. This is a kind of a way of getting maximum efficiency out of brief periods of time.

We have seen a small sample of our work with David. The sample does not tell you all about the program in which David participates... The program, as I said before is complex. It consists of a large-scale teaching enterprise in which I have taken the responsibility of teaching children, teaching their parents to teach them, teaching university students to teach children and to teach parents to teach children. Each of these university students is also expected to come to teach other university students to do the things that they were taught to do. This is a very, very teaching place. And I remind you again that our definition of teacher is a demanding and unforgiving one.

As you can see, our laboratory abounds in pupils, and they come in all ages and sizes. Our principle research activity is really research into issues of establishing teaching-behaviors in a wide variety of people. I must not close without giving acknowledgement to the occupants of still another, as yet unmentioned, room in the laboratory. The sign on the door says "Assistant Instructors." In this room live a colony of small animals --- and for the past two years they have been mice. They are a vital part of our teaching programs. They form part of a level of accomplishment, a kind of pre-test, that we make a prerequisite to teaching children. I have designed a small piece of apparatus called The Teaching Tube that serves as a kind of a classroom, a kind of a RABbit Room, in which a mouse can be taught. Before anyone is permitted to enter the RABbit Room as a teacher of children, he must first have demonstrated his mastery of the principles and the practice of the analysis and modification of behavior through having taught and demonstrated the performance of his mouse.

We have found that one of the most crucial elements in effective teaching of parents, other professionals and non-professionals and just about anybody --- regardless of their variety and extend of their educational background --- becomes a better teacher when they can have a clean, laboratory experience in coming to see what teaching is all about. When we work with children, we get very, very caught up in the problems of their humanity. They are so "complicated." We are so tied to them, and with them, that it gets to be very difficult for us to step aside and actually make clear, clean straight-forward descriptions of Setting, Behavior, and Consequence. This is particularly difficult since we are part of the Setting, and we are often managers of the Consequences. So it's an extremely difficult thing to become a teacher in the sense of coming to systematically analyze the behavior in three terms, and to systematically and rigorously manage and control both Setting and Consequences to establish new Behaviors in a pupil when you are in the scene and part of the Setting and part of the Consequences. We have found that this is an extremely effective set of procedures. We have been working hard at "streamlining" and making basic instruction in the Science of Behavior Analysis and in its applications to teaching easily accessible in terms of time spent. The book I mentioned before is part of this program for extending teaching in the basic science and in its application to a wide variety of people who will someday be called upon to serve as teachers.[3]

I can conclude by saying that we continue to study our own results critically, and to work towards the goals of more precise descriptive analyses, more accurate prediction, and greater efficiency in our teaching programs. It has been a challenging experience to try to present, in coherent and useful fashion, within the short time available today, a view of my work that is both extensive and global, and specific. I hope I have had some measure of success, and I thank you for your kind attention.

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[3] The complete program, called The Behavior Science Laboratory Unit, is available from MonoLabs, P.O. Box 8341, Rochester, N.Y. 14618.

Discussion after Speech

Question: What success have you had with a child who is totally non-verbal?

To begin with, "totally non-verbal" is a hard thing to say. As I mentioned before, we tend to lump all sorts of activities under the rubric of "language." To say "non-verbal" means that he displays no receptive repertoire and no productive repertoire, to introduct two new terms which we did not get into in the talk. These, however, are terms that are very much a part of our analytical procedure and these terms are "productive" and "receptive repertoire." We will briefly define them this way: a productive verbal repertoire is a set of movements that serves to control the behavior of another human being. A receptive repertoire is a set of behaviors that are under the control of some other human being's verbal behavior. Now a totally non-verbal child is unusual. If you mean a child who doesn't speak or those children that are sometimes called "mute," we see children that fit this description as well. The lack of productive repertoire is not only a function of the child's behavior but also tells us something about the behavior of the other human beings around him. We said a "productive repertoire" was the display of a set of movements that function to control the behavior of another human being. It is rare to find a child who lives in some Setting with other human beings who does not display some movement that acts upon, that controls, the behavior of another human being. The movement might be a gesture; the movement might be grunting; the movement might be pointing; it might be whining. If the organism moves, it is very unlikely that the organism lives in some social Setting with other human beings, and does not display some specific set of movements that come to control the behavior of other human beings. We have one little boy, totally limbless, who nonetheless digs his chin into his chest and makes a grunting sound. The grunting sound, his mother says, "drives her up the wall." She can't stand it. "What do you do when he makes this terrible noise?" She says, "I run like crazy to see what it is that he wants, and then, thank God, he stops." This has gone on and on now. Is this boy totally non-verbal? That's an interesting question; you're already now a sophisticated group of behavior analysts. What have we just described? A set of Strengthening Consequences that are regularly, systematically applied by mother, following the behavior of digging the chin into the chest and grunting wretchedly, which takes place in the Setting of some property of the environment. And this little fellow whose name is Peter, is a grunter. Now he is brought to me and is described as having no productive verbal behavior. The answer is, this is not so. Peter has a limited, but very functionally effective repertoire, which is a kind of repertoire that most new-born babies display; that is, the screaming and crying is such that mother will check the diaper for pins, check the diaper for wet, check the diaper for soil, see whether he has a gas bubble, does he seem to have an ear ache, is he hungry, is he thirsty, is he overdressed, is he under dressed, is the light too bright, etc., etc. All this youngster does is make a wretched noise, and this wretched noise comes to control an elaborate set of behaviors displayed by mother. What is the Strengthening Consequence that supports and sustains this fury of activity on mother's part? What's the Strengthening Consequence? Right. Silence. In other words, you have to write this Line of Behavior this way: (we are talking about mother's behavior) When the Setting includes the baby's screeching, there is high probability of the Behaviors of thumping, turning, lifting, etc. and these movements are followed by a change in the environment, and the change in the environment now is silence. That is the Consequence that strengthens and maintains all the behavior that preceded when they are displayed in the Setting of baby screeching. So the answer to "Is there a totally non-verbal child?" is "Rarely." Peter is a good case in point. Peter cried, he grunted and he whined. Our concern here was with changing the shape of those movements and what we're able to manage and work with, is the environment before and the environment afterwards. So for example, we put Peter, he has a little kind of contraption that he sits in and which holds him up, and he has a bit of a fragment of a limb where arms should be, so much so that he can push a marble off a table with it. And I have a Maxwell House coffee can, (I'm waiting for them to send me a case of coffee,) and I put a marble on the table and Peter can then slug the marble with his arm and it falls into the coffee can. It makes a terrible clatter. It happens to be a Strengthening Consequence for the Behavior of pushing the marble off the table top when there's a marble on top of the table. When is there a marble on top of the table? There is a marble on the table when Peter makes noise that is less like grunting, highly nasalized and tightly pharyngealized vowel. And any sound that Peter makes that has some approximation to a clean oral vowel is one after which immediately pop a marble on the table in front of him and he whacks it into the coffee can and away we go. The parents complain that "He only knows one way of getting our attention, and that's with that rotten whining, grating, sound." And so we moved along the way with Peter and I stand there with a big can of marbles and I turn my back to Peter and Peter procedes to product sounds. And Peter goes "aaaah." And at that particular point I whip around and say "Did you call me, Peter? Well, how about a marble in the can!" Now there was something about that last little sign that was not quite as distressing as the ones that preceded it, and at the first sign of a sound that is in some way an approximation of what we want, then I turn around and Peter, of course, has now been taught to "call." So now of course, it's a game, a delightful experience. What we've taught Peter, very simply is: When you're in a Setting that includes another human being, behaviors that resemble "ah-ah" will be immediately followed by the presence, the face, the action of the other human being. If the other sounds are followed by the noises in the environment, but _not_ by the face of another human being, then Peter now "calls," and now Peter becomes "verbal." So what we have done simply up to now is obvious: He moves his muscles in such a way as to produce sounds. The kinds of sounds he produced were obviously strengthened by the social environment. Our concern was with strengthening desirable sounds and by managing our Setting very, very, carefully, we have brought about subtle, but systematically progressive changes in the direction of desirable behavior. We have youngsters who didn't even make sounds.

We had one little girl who was considered to be profoundly deaf, and who was not only a lip _reader_, but a lip _talker_. So there's no writing this one down in the transcription, I'm afraid, "What's your name, honey?" She smiled at you and said, "   ." You have to write that you _see_ the lip movements that go with saying "Joanne," but no sound. However, Joanne breathes and what we did was simply provide a Strengthening Consequence everytime some example of Joanne's breathing was just a _little_ louder, a _little_ raspier, a _little_ noisier than ordinary. So we started with "(breathy noise) - huh" and we went at it. The issue of how many times do you get it? Well, we had a ball game with Joanne, literally a ball game --- ping-pong balls and things like that that went flying all over the place at the appropriate moment, we also had a doll, that came up over the edge of the table from time to time, and we started off with "huh" and she made hundreds and hundreds and hundreds and hundreds and hundreds of "huh." And you'd better bet that one of those hundreds of "huh" was louder than the ones that preceded it, and bit by bit we shifted to louder and louder "huh," and away we went. This takes time, but it doesn't take as much time as it might seem because fifteen minutes of good RABbit Room time provides the occasion for literally hundreds of Lines of Behavior to be displayed and managed by a teacher. And if you can make several hundred Lines in a fifteen or twenty minute session, and you do this every day, it does not take forever to shape breathing sounds up into vocal sounds and then to raise the vocal sounds to a higher level of audibility, and then lo and behold! once she was phonating, the lip movement accompanying phonation (which she didn't hear), but the lip movements accompanying phonation now turned out to be such that when you said to her two weeks later, "What's your name, Honey?" She said, "Joanne." It wasn't the greatest speech in the world, but it was the first time that anybody could hear her say her name, and it took hundreds and hundreds of Lines of managed and arranged behavior.

There are all sorts of problems. They need to be looked at in terms of issues of the shape of the movements, whether it's the middle term, they need to be looked at whether it's a problem of Setting Control --- echolalia, of course, is a case of Setting Control, they need to be looked at in terms of Consequence Control, or they need to be looked at in terms of some special set of relationships --- undesirable, non-standard relationships --- between the Setting and the Behavior, and the Consequence. But we have worked with youngsters who made no sounds when they came to the Lab, and we have taught them to talk. Some of the youngsters talk elegantly -- too much. Joanne is a case in point. And you'll have to forgive me this terrible story. It's about a telephone call. We had worked with Joanne for about thirteen weeks and started Joanne talking. She now talked enough so that she was treated as a talking child; in other words, Joanne became a special property of the Setting for other human beings. You do not talk to your puppy in the same way you talk to your child. Joanne had been addressed like a puppy --- a sweet, loveable, beautiful little girl, but one who doesn't talk back, and as soon as Joanne "said something back," Joanne changed from "puppy" to "a little girl." And she was now a different property of the Setting for the rest of the world. Of course, they now started to behave towards Joanne as a talking little girl, and she progressed by leaps and bounds. We couldn't get Joanne into the special kind of school Setting that I had recommended. I recommended one in which there'd be powerful emphasis on vocal-verbal behavior, and there was a school that had special classes --- it was a school primarily for deaf youngsters --- but the director wouldn't accept her because he was engaged in a serious research project, and there was some mention in Joanne's records that she was possibly brain damaged in addition to being deaf, and he didn't want to muddy his data by having a possibly brain-damaged child in with other children, so there was no place for her. So they had to put her in a regular school and about six weeks after she was in school, I got a phone call which was a priceless experience. The teacher said to me, "Dr. Sapon, we're having trouble with Joanne." I said, "What seems to be the trouble?" And she said, "She's fresh!" And I said, "That's wonderful!" And She said, "We have a bad connection. It almost sounded as if you said 'That's wonderful.'" And I said, "No, no, no, I said that I said, 'Do tell!'" So she said, "Well, she was supposed to go to speech therapy, and she didn't want to go and I said, 'You've got to go.' And she said to me, 'Go to hell!' And I want to know what you've been teaching her in your laboratory." And I was really in a bind, so I said, "Are you sure that's what she said." She answered, "There was no mistaking it; it was loud and clear!" At this point I managed to keep my mouth closed, and the best I could say here was to myself, "What an absolutely superb example of verbal behavior, fully appropriate to the Setting, and supported by the Consequences, because the teachere did not send her where she didn't choose to go, the teacher left her in the room to go and call me up!" But, to sum it all up, starting from an absolutely silent mouth, we've had youngsters go on to "fresh." That's more of an answer than you asked for!

A COMPREHENSIVE PROGRAM FOR AUTISTIC CHILDREN

James W. Johnson, M.D.
Director, Child Psychiatry Division
Fairlawn Center, Pontiac State Hospital,
Michigan

The Children's Psychiatric Program at Fairlawn Center began in 1955 with eight emotionally disturbed children being separated out on a residential unit of Pontiac State Hospital; the separation was designed to encourage the development of an appropriate milieu program for the children and to discourage the perceptual harassment by the adult patients and staff. The Children's Service ranks gradually increased as new admissions were accommodated and more children were recovered from the adult wards; one year later 18 boys between the ages of 7 to 16 were being treated on the unit, while plans were formulating for the development of special education facilities in an adjacent building. This heterogenous grouping of emotionally disturbed children soon necessitated the recruitment of an additional adult ward which allowed for the development of preadolescent and adolescent services.

In 1965 our enrollment was 80 boys and 20 girls; the girls occupied yet another adult ward and Fairlawn School was coeducational, as 80 percent of the children attended regular classes. The staff's attention was focused on the 20 percent of the handicapped children who were not able to tolerate a regular special educational setting; they included a small group of autistic children and a larger group of adolescent schizophrenics. Our concern for the physical safety of the autistic boys in this environment encouraged the development of a modernized wing of the main hospital to accommodate 40 adolescent boys (ages 13 to 17 years) on the first floor, and 20 adolescent girls on the fourth floor; the cutoff of age 17 was established to avoid further expansion of our waiting list for Children's Service and to coincide with the age restriction of the community juvenile courts. The average length of hospitalization for the children being 22-24 months and the ever increasing demand for pediatric psychiatric services from the catchment area of ten counties in southeastern Michigan, further necessitated expansion and innovative development of the Fairlawn Program.

The encouragement of our volunteers and parents, the interest of the Michigan Department of Mental Health, and the appropriation of funds by our legislature collectively culminated in the dedication and opening of the new Fairlawn Center facility in 1968. The Children's Program could then accommodate 80 preadolescents, 60 adolescents, and 40 day care children; the preadolescents were separated by age and symptomatology on four 20-bed inpatient units, thus allowing for the development of Maplewood Hall for our autistic children. The challenge of designing a treatment program for normal appearing, yet detached and frequently mute, autistic children caught the fancy of our multidisciplinary staff, and soon literature review and research seminars were being scheduled for all those interested. Our staff encouraged parent participation and volunteer involvement while each child was assigned a therapist to coordinate the therapeutic milieu. Our initial experience in the application of operant conditioning techniques proved stimulating and yet frustrating; there was an obvious increase in our expenditures for "M and M" candies and dental repair, while the clinical results were disappointing.

The introduction of a Community Mental Health sponsored pre and aftercare program for emotionally handicapped children at Fairlawn in 1969 further enabled us to consider new modalities in our autistic children's treatment program. The long awaited possibility of seeing these autistics as early as two to three years of age became a reality with the development of our pre-school nursery program. The nursery originally began with a handful of staff volunteers, a group of local university students, and the grateful mothers of four autistic children; the current program is funded through "Act 54" and involves 15-17 severely handicapped children serviced by professional staff, and assisted by volunteers and the children's parents.

In the review of the development of our comprehensive program for autistic children for this meeting, in our weekly research seminars, it became quite apparent that certain members of our staff were capable and enthusiastic about presenting their description of the various facets of the program that they were responsible for. I would now like to introduce these staff members, who in turn will briefly describe their contributing service to our comprehensive program. The services to be elaborated upon include:

1. AN INPATIENT AUTISTIC PROGRAM
2. A PARENT GROUP PROGRAM
3. A PRESCHOOL NURSERY

The initial presentation will be by Mrs. Steven Mertz, R.N., Head Nurse on Maplewood Hall; Mr. Dennis McDonald, M.A., special education teacher and ward manager; and Mr. Robert Tunnell, M.A., Ed. S., special education instructor.

The parent group program will be described by Mr. Norbert Birnbaum, M.S.W., who is one of the autistic children's therapist.

The preschool nursery will be described by Dr. Azizolah "Ozzie" Malakuti, who is the Chief of Pre and Aftercare Services at Fairlawn Center.

1. INPATIENT

The program for autistic children at Fairlawn Center utilizes the milieu approach, which appears to be well suited for our children since the approach allows us to manipulate the environment for each child for intensive care, planning and treatment. The basic goal of this program is that each child who participates in it will have the opportunity to return to his community as soon as possible. Through planned programs, each child will have an opportunity to reach his potential.

The autistic program at Fairlawn provides services for outpatient, pre-schoolers and those children residing at the facility. The two programs are operating independently of each other, although they both utilize some of the same facilities. The out-patient program is currently seeing twelve to eighteen children, while the in-patient program has a population of twenty-one. Both programs involve parents in planned activities as well as, suggestions in handling speech and behavioral problems.

In-Patient Unit

The in-patient unit is comprised of a total of twenty-one children, eleven of which reside on a living unit called Maplewood. The remaining ten children are dispersed among three other living units at Fairlawn.

The education program consists of two classrooms and two teachers. Idealistically, a one-to-one ratio would be best suited for our children. The goals of our educational program are the following: (1) to give each child an opportunity to function at his optimum level, (2) to bring each child to a readiness or a higher level of competence, (3) to enhance interaction and relationships with people in a meaningful manner, (4) to educate the children in social graces, so as to be acceptable in the community, (5) to help the children enjoy their environment meaningfully.

Several basic procedures are felt to be inherent in a good educational program for our children. The first is establishing a good mutual relationship. This is extremely difficult and may entail much time, effort and sincerity. We feel that establishing a relationship is the key in making progress with the autistic child and cannot be overemphasized.

After a relationship has been established, and that could mean that your physical presence is being tolerated by the child, a type of motivation should be secured which is meaningful for each child. Planning and understanding of the child is essential at this point. The educational program should be realistic and planned according to the individual needs of the child. In our classrooms, there may be as many as ten children in a group or only one. The factors determining the child's placement are his acceptance of being in a group, his level of cognitive functioning and our ability to control his behavior.

Now, returning to the topic of motivating our children in the classroom, we feel it is essential to utilize what will be successful with the child. If reinforcement techniques or operant conditioning demonstrates success with a child, we will utilize that technique. However, this technique is not often successful with our children, therefore other techniques must be utilized. For some children, your physical presence is important. The relationship between the child and the teacher is the motivating factor. In essence, we feel one must be constantly looking for techniques that are successful in the classroom with these children and be willing to change the approach if it is proven unsuccessful. At this point we are concerned with the major areas of learning: (1) socialization, (2) awareness of environment, (3) speech, and (4) readiness skills.

We have found that most of our children benefit most when the environment in the classroom is structured and consistent. The child slowly becomes aware of acceptable behavior which helps make learning possible. The child's relationship with peers and adults becomes more stable and less threatening. Each child's behavior influences the behavior of the other children. Consequently, a behavioral patterning takes place, in that, the children are influencing each other and eventually this behavioral change has a positive effect on learning.

Most of the children we service evidence motor perceptual disturbances. They often flap their hands, flick their fingers, whirl, walk on their toes, dart and lunge. To help improve these disturbances our children attend a motor perception class twice a week. We try to improve motor functioning through the use of running, crawling over and under objects, bouncing, throwing and catching a ball, walking balancing beams and jumping on a trampoline. Swimming also helps improve these disturbances, as well as, helps improve muscle tone. These activities also allow the child to become more aggressive, but in a socially acceptable manner. Furthermore, the child receives body contact from the human object that is needed to continually encourage interaction and relationships with people.

In order to help the child use his hands, follow directions, and learn basic skills like tying, lacing, left to right, sizes and shapes, he attends an Occupational Therapy class. This class is designed to help fine motor coordination, as well as, providing an avenue for the child to ventilate his agression.

Speech therapy, is essential for most of our children, since over half of our population does not have speech. Our speech therapist cooperates with our staff in helping design a program that encourages speech.

In order to help our children adapt to and understand their environment, we arrange field trips into the community throughout the year, although the heaviest emphasis on field trips is during the summer months. The field trips consist of picnics, swimming, visits to the farm, trips to the zoo, movies, lunch and dinner trips, hikes, trips to the circus and seeing fire stations. Before each trip the children are prepared for what they will see in the classroom. For example, before going to a farm the children will be presented with a unit about farm animals and farm life. It has been our experience that many of our children have never seen a real cow, horse, or duck. Therefore, the learning process takes place in the classroom before the trip. After the trip we discuss our trip and evaluate what our children retained.

Most of our children have never experienced using simple tools in a work situation. For those children who are able to handle such a situation, we have developed a vocational program. But before we place a child into this program, which operates in conjunction with the school and other activities, we have the child attend pre-vocational work groups. In these groups the child learns how to use simple tools, like a rake, a hoe, a lawn mower and a shovel. He also learns to work with others. When his skills improve he can enter a vocational class where he learns to use power tools and plan projects. With the help of this program we have placed one of our boys in a sheltered workshop where he works eight hours a day and receives payment according to his production.

Speech therapy is essential for most of our children; in order to develop speech with these children we have secured a large, brightly colored mechanical talking cow and dog. The cow, called Elsie, and the dog, named Snoopy, are mechanically designed so that a human voice can be heard through the animal by the child without seeing the speaker. The speaker may also hear the child's sounds without being present in the room. Observations are made through a two-way mirror. The basic premise behind using mechanical objects for obtaining speech from autistic children is that these children will relate to mechanical, benign objects that are non-threatening before they will relate to the human object. The children learn other things besides speech. They learn to identify the body parts, like eyes, ears, and feet. Also since these animals are brightly arrayed, they learn color identification. Thus far, this technique has been successful with some of our children in the acquisition of speech. Furthermore, the speech they have acquired is utilized in the classroom and other activities with humans.

Another activity involving the talking animals in the classroom is utilizing children who have developed speech in groups. With the direction of Elsie or Snoopy, the children discuss behavior that is desirable and that behavior which is not desirable. The children discuss each other in an attempt to secure peer interaction. This group of children is enthusiastic about their conversations with the talking animals and often ask for such visits.

Another activity that our children are involved in is summer camping. This year our children will camp overnight for three days. This will not be the first such experience for some of our children and they enjoy the activities immensely. Some of the activities planned are swimming, canoeing, hiking, cookouts, collecting leaves, exploring nature and fishing.

Individual therapy is an important aspect of our program. Conventional therapy is often impossible with our children, therefore, the therapist often is involved in other kinds of therapeutic activities. The therapist may teach the child to play, to eat with knives and forks, and help the child in a planned speech program. The primary importance of the therapist is to coordinate the child's activities throughout the milieu and to help parents with handling techniques at home.

Summary

Since our program's inception in March 1968, we have seen forty children. Out of the forty children we have seen, fifteen of them have been discharged from our program. Four of the fifteen have been transferred to the adult service at Pontiac State Hospital; two children were transferred to Lapeer, an institution for the retarded, and one child is in an institution out of state. The remaining eight children are now attending public school and are living at home with their parents or in a foster care home. There are eight children who are currently residing at Fairlawn Center who will be sent out of the center this summer. One of these children is working at a sheltered workshop, while the remaining seven will attend school and live at home.

One of the most important factors influencing the child's placement out of the center is his age upon admission to the center. Of the six children transferred to other institutions, four of them were over twelve years old when they were admitted. Our best successes have come when the child is younger than twelve at admission time, and preferably we would like to receive them as young as four or five.

Another important factor influencing placement in the community is speech development. At least three-quarters of our original population did not have speech when admitted, but two-thirds of our total population (40) have developed speech. Some of them communicate well, while others have mastered only basic rudiments of speech. We work very hard on the area of speech because learning develops more quickly when speech is developed and our society vastly emphasizes the spoken word, which means one must have speech to be accepted and survive in the community.

We feel that an intensive and prolonged program with these children is a necessity. Therapy and treatment must involve every aspect of the child's life. Education is immensely important, in that, a child's relationship with his teacher for almost six hours a day, five days a week has a profound impact on the child and what successes can be made.

2. PARENT GROUP

Maplewood Parent -- Staff Meetings

1. Set Up

   A. Third Monday of each month

      (1) Once a month because meeting took place at night to encourage involvement of fathers. Parents and staff decided this would be enough. This was a mistake since the meetings were so few and far between no unity developed.

      (2) Third Monday to avoid other meetings (P.T.A., etc.)

   B. Both parents and staff included

      (1) The reason for including staff is because it has been found that staff often attempt to prove they are better than their own parents were in raising children. For this reason staff may become rebellious and competitive towards the patient's parents.

      (2) The close interaction of the meetings (as well as parents being on the units) allows the staff to relate on a more personal basis with the parents, hopefully cutting down on the above.

C. In conjunction with parents working with their children on the units

(1) Previous to this program parents didn't participate in treatment of children.

(2) Total and quick separations often provoked violent reactions in some of the children. To prevent this there began a preparatory period of outpatient work where the mother-child-and staff were together as much as possible. Following admission the parents continue to participate in the program on a regularly scheduled basis. This was also done in order to show the parents what we do here so some of this training could be carried over to the homes.

(3) The monthly meetings were to help explain to the parents what they may have seen and not understood and also to talk over their frustrations.

II. Further rational for meetings

A. Due to the tremendous demands autistic children place on the parents and staff, much anxiety and hate is evoked in us. We must be willing to understand this and accept it. It is usually easier for one person to do this if they know others feel the same way. If we deny our feelings, our anxieties may stop us from providing the infinite patience, tenderness, skill, and devotion required. Without this expression the child may eventually be ignored by both the parents and the staff because of the feelings he evokes in us.

B. Also important for parents to discuss the problem the autisitc child causes for the other children in the family. The way the parents relate to the other children often depend on the amount of understanding they have concerning their feelings towards the autistic child.

C. It is important for the staff to understand the feelings of the parents. To the extent that the child manages to evoke the same reaction from the staff as he did from his own parents the treatment will be a failure.

D. Participation of the parents often keeps the hospital interaction on more of a reality basis. When parents are not seen often, the child care staff will substitute the therapist-child relationship for parent-child. Thus, because of their frustrations, the countertransference sometimes makes them hostile towards the therapist. On the other hand, the therapist may do the same in expressing his hostility to the staff-child relationship, thus, constantly being hostile towards the child care workers and child.

III. Present outcome of program

A. Parent involvement has dwindled down

(1) Possibly, upon admission, parents should be told they are "expected" to participate in the program.

(2) Meetings on a more regular basis (once a week) might create a greater group unity.

(3) Member of the Maplewood Staff should conduct meetings rather than an "outsider." Thus the parents would have a more frequent contact with the "leader."

B. Staff involvement has dwindled down

(1) Staff cannot be required to come because of no overtime.

(2) Staff possibly feel they get enough interaction with parents on the units.

(3) All staff working at the time of the meeting cannot be freed because someone must remain with the children.

(4) Change over in staffing.

C. Great deal of resistance at the meetings

(1) Again meetings may be too few and far between for any trust and unity to develop.

(2) When parents are not required to participate they can escape their frustrations by not taking part rather than face them and talk them thru.

(3) The time of the meeting (7:00-8:30) may be too late and people may just be too worn out to actively participate.

(4) Many problems are being approached too directly by me.

    (a) In one meeting a record was played that was concerned with a disturbed child and his parents. The discussion concerning the record and the feelings brought out in it were one of the best in the series.

IV. Recommendations for improvement

A. Make it known to parents upon admission that they are "expected" to participate.

B. Have the meetings earlier in the day, even though both parents may not be able to participate.

C. Make use of more "audio-visual" material.

D. Have "participating" parents talk to "new" parents about the advantages of participation for both themselves and their children.

E. Use a smaller room than the conference room. That room may be too large to encourage any "closeness."

3. PRESCHOOL

It was frustrating for the parents and for us to have an autistic child and not to know what to do. The parents had sought help from a variety of sources including pediatricians, nursery programs, speech and hearing clinics, and private practitioners with little encouragement or hope in terms of treatment for their youngsters. After we had seen several of these children we were faced with numerous problems in terms of how we could help these youngsters. The minimum age requirement for admission to the hospital was six years old and these children were all younger. And even if admission were possible after a long waiting period, the parents could not tolerate the idea of placing their young child in a hospital away from their family. Additionally, even if the above problems did not exist, we did not believe that the autistic child should be separated from his or her mother as we felt (and are even more convinced at this writing) that only through the mother can the autistic child achieve the most desirable contact with the outside world.

Being dissatisfied with simply placing the names of these children on the waiting list for admission into the hospital and realizing from our background reading that the outcome of treating autistic children is discouraging especially when this treatment does not begin early enough, we felt an urgency to initiate "something" even though we were confronted with the various obstacles referred to above in addition to a number of practical limitations of our own clinic (e.g., few staff, lack of physical facilities). Determined not be defeated by the facts facing us, we brainstormed possible alternatives and developed a therapeutic nursery program, which at this time is an existing bonafide program within the Pre and After Care Clinic.

In this brief article we do not intend to present a scientific treatise on autism; however, we would like to share with the reader some of our experiences, specifically our failures and our successes.

How We Selected the Children

As our principal guideline for selecting these children we utilized for the most part the criteria first presented by Leo Kanner, namely, (1) lack of relating, (2) lack of proper speech development (e.g., echolalia, pronoun reversal, complete autism), (3) maintenance of sameness, and (4) ritualistic behavior and preoccupation with particular objects. We also found useful Dr. Rimland's criterion of alternating heightened and non-responsive sensitivity to stimuli. In addition, we were looking for motor dysfunctioning with peculiarities such as toe walking and lack of chewing. We believe that other "autistic behavior" such as head banging, temper tantrums, hyperactivity, destructive behavior, whining, disturbance in sleep, eating, and elimination is mostly secondary to the primary criteria developed by Kanner and Rimland. Generally we felt the age of onset was early and, specifically, before the age of 30 months. We did not use intellectual functioning per se as a criterion for diagnosis of autism, believing along with Reutter that intellectual functioning should be considered as a category separate from the psychiatric picture. We also think of organic brain damage in the same way. In other words, an autistic child might be primarily retarded or secondarily retarded as a result of not relating and being preoccupied with only one aspect of life, thereby not having the opportunity or chance to develop the intellectual capacity which may be lying dormant. With all these considerations in mind in our selection, we had by the Fall of 1969 four children who we were determined to place in some kind of effective treatment program.

How We Got Started

After selecting the children we came to the problem of how to organize a program, obtain staff, and finance our activities. When in-patient staff became aware of our goals, a number of them donated off-duty and "coffee break" time to become involved in carrying out the program. In addition, we received help from interested undergraduate students from nearby Oakland University who caught on with enthusiasm to the idea of a therapeutic nursery program and donated a substantial amount of their time. As part of the treatment approached to be discussed later on we also incorporated the parents of these children in the program. Physical space was borrowed from in-patient facilities. The first few weeks were confusing with different rooms having to be used different times of the day and different volunteers and staff becoming involved on different days of the week. The responsibility of the professional staff of the Pre and After Care Clinic (consisting of two people) was to train the volunteers and instruct the parents, search for extra help, and at the same time document the necessity of the program for the future. On a number of occasions we seriously questioned whether the program could continue to exist - especially during breaks in school semesters when whole groups of volunteers would have to stop their involvement in our program. Despite the frequent confusion and chaos of the program and despite the fact that our approach ran counter to the traditional emphasis on consistency in handling disturbed children, our youngsters did make progress, and this progress and improvement were encouraging enough to continue our efforts for a year and a half, at which time the program gained official recognition and financial support from the Oakland County Community Mental Health Board. This allowed the program to be enriched by adding a social worker, two child care workers, and a special education teacher to our staff. During the first year and a half we were not able to carry more than four to seven children. With this additional staff our enrollment increased to over twelve, and, of course, the program was more active and effective than previously.

What To do With the Children

After reviewing the literature and pooling our own experience we concluded that no single therapeutic approach has been beneficial for all autistic children, even though each approach appeared to have varying degrees of positive results. We, therefore, have not rejected or accepted any one modality of treatment, but we have endeavored to use everything available to our knowledge at one time or another when it was applicable to our children. More than simply being electic in our approach, we attempted to integrate the different elements of each treatment modality into one integrative approach. For example, operant conditioning was not only used for reinforcing a particular type of desirable behavior but it was also used as a tool for initiating a relationship with the child and helping him to realize his own self-identity. We never tried one approach exclusively but tried to apply the positive aspects of all approaches at one time. Recognizing that our children were fragmented enough in functioning, we attempted to treat them in as non-fragmented or "gestalt" manner as possible. Some of our approaches were the result of hypothetical assumptions such as vestibular rehabilitation on the basis of the theory of vestibular disturbance in autistic children. Other approaches were simply taken from our espirical observations of what appeared beneficial and "to work" with the children.

Following are the elements of integrative therapy in greater detail:

(1) In the arms of the mother, not in a strange environment.

Since we do not believe the child should be separated from the mother, we arranged and made a contract with her to be incorporated in the program and to be used as a therapeutic agent. We saw her presence as serving a number of functions including contribution of information about her child, the opportunity of inspecting the program and knowing at all times just what is going on, resolving some of her guilt feelings, decreasing frustration, adding to her understanding, and being able to feel that she had an active part in the improvement seen in the youngster. As one example we cannot over-emphasize the mother's help in "translating" the symbolic, verbal, and non-verbal language of her child. This saved us a lot of time and confusion. Gradually, the mothers picked up our enthusiasm regarding the program and their negative feelings started to be replaced by positive ones toward their children. The presence of the mother provided a constant element in an atmosphere of continuous change of every other stimulus around the child, facilitating change in the child by making him aware that the mother-child relationship will remain stable even though he might risk to behave in a different manner.

On a practical basis we arranged for one or two mothers to be with the program the whole three hours of working with the child, and all the mothers participated in weekly staff conferences during which we discussed our frustrations as well as our successes. At this time the mother was given an opportunity to talk about her child's behavior at home during the week. As a result of the mother's active participation in the program, the mothers did not feel so much alone as to how to handle the problems that their children present, and we were not committed for the whole responsibility of the problem.

(2) Treatment of family and significant others in the environment (e.g., father, siblings, grandparents, teachers)

We were aware that in families with an autistic child the problems of this child frequently overshadow other problems in the family as well as prevent family members from realizing that in their lives they do have areas of success aside from the relationship to the autistic child. We provided other family members an opportunity of expressing their problems revolving around areas unrelated to the presence of an autistic child in their family, and frequently strengths and abilities were brought out which heretofore had been ignored. On a practical basis we arranged group therapy with the parents, collateral therapy with siblings, and consultation with the parents, grandparents and teachers. This had the positive effect of integrating the whole family for facing the particular problem of having an autistic child.

(3) How psychoanalytic oriented therapy comes into the picture.

Since we believe the greatest deficit in these children is their failure to relate, our major effort was geared toward helping these youngsters break out of their shell and to have contact with reality, and specifically to develop meaningful object relationships. For this purpose psychoanalytic theory as well as techniques for treating children such as direct interpretation or providing opportunity for spontaneous insight were utilized. To be more specific, we did allow the child to experience the pleasures associated with different levels of psychosexual development (oral, anal, whatever) and the child was given insight into the proper expected consequences for this behavior. For instance, we might allow the child to suck his thumb and experience oral pleasures or just let him be messy or overly meticulous. We tried to set the scene so that each child could go through the experience of pleasure associated with the different levels of development without experiencing anxiety. If on the other hand we felt that a particular kind of behavior represented an arrest in development and was causing the child anxiety because he could not seem to go any further, we might place limits on his behavior and pave the road for the child to move to another stage of psychosexual development. To help the child move on we frequently would utilize substitute activities so that he would be less resistant to the change being asked of him.

(4) Our attitude toward and use of behavior modification.

Despite the high value that we place on operant conditioning therapy, we cautiously utilized it as we believe the very nature of operant conditioning which calls for consistency and repetition of action would feed into the pathology of autism, namely the desire for maintaining sameness in his environment. The operant conditioning with positive and negative reinforcement that we used was mostly for the development of language and stopping undesirable behavior such as head banging or destructive behavior.

It is noteworthy to indicate here that at times we attempted a particular kind of operant conditioning, referred to as reverse conditioning, in which an undesirable behavior would initially be positively reinforced (e.g. candy given immediately after each incident of action) and then when the pattern of behavior started to have some association with the reward we withdrew the reinforcement and the undesirable behavior stopped or decreased.

Desensitization was utilized in helping the youngsters gradually accept change in their routine. The worker and parents were told to change the child's routine as much as possible (e.g., not driving to the hospital using the same roads every day, not working with the same volunteers each day, not working constantly in one particular area, not introducing one action constantly). We believed and were concerned about not getting trapped to any kind of routine procedure, and here some of our difficulties such as not having a permanent staff or specific rooms for the program were helpful.

In any kind of behavior modification treatment, our main goal was having the child relate better. If the relatedness was improving we did not fuss over whether or not there was improvement of the particular behavior for which we started behavior modification therapy.

(5) Sensory stimulation and sensory deprivation

When it was indicated we went to both extremes. For sensory stimulation we tried to find ways agreeable to the child and then we were careful about the dosage of stimulation. Various types of auditory, visual, and tactile stimulation were attempted with frequent substituting of one modality for the other (such as putting a transistor radio in close contact with the skin so that the child would feel a sensation through the skin rather than hearing the sound alone). Water was a great source of help and many of our sensory stimulation activities were conducted with good results in the swimming pool.

Sensory deprivation was never used for any length of time; however, we did obtain positive results by placing the youngster in a large cardboard box with sufficient opening for ventilation and keeping him in the box for a few minutes.

Very often after such an experience his approach behavior toward others would be better. Also, we occasionally would leave a child alone in a room without interruption for as long as ten minutes.

Sensitivity therapy also had a place in our integrated approach. For instance, we placed three children in a large cardboard box so that they were in close contact with each other. This was the beginning of one of our most emphasized efforts, namely, having the children relate to each other and later on to other children. Having an autistic child relate to an adult is one thing, but relating to another child of his own age is crucial to his breaking out of his shell.

(6) Group therapy

Exactly for the purpose of having these children relate to each other and to other children, we used group therapy for a selected number and mixed them with non-autistic but emotionally disturbed children. We confined them to a very small area in the room with no toys or other objects. They began to stimulate one another and gradually began to relate. Occasionally, we would use interpretation, sometimes only mentioning the dynamics and other times giving a very psycho-analytically oriented interpretation. On some occasions, we tried the principal of gestalt therapy as well.

(7) Educational therapy

Although we were not particularly concerned with educating these children in the traditional sense of the word, we did recognize that they possessed some natural interest and curiosity about the world around them and that by capitalizing on this desire to learn we might be able to help them open up channels for communication and relating. We believe that the autistic child generally can learn and store knowledge, if not more than usual, at least with the same rate as normal children; however, this learned material is not available to him to use or he is not interested to use it, or most probably he does not see any usage for it. As soon as the problem of not relating is solved or improved he is free to start using the knowledge he has already accumulated.

In our approach all educational activity has the underlying goal of establishing relationships. The introduction of a new object was not only because he would learn something new but that it would also have the effect of bringing the child out of himself and taking an interest in his environment. After all, education is a very sophisicated way of relating to each other!

(8) Organic therapy

Under this section I would like to discuss the medication we used and also mention physical therapy, recreational therapy, and an interesting approach of vestibular rehabilitation.

We never used any particular medication as a sedative, stimulant, or otherwise, but we tried to introduce different medications at different stages of treatment as indicated. If while working with the child a great deal of anxiety was released, an anti-anxiety medication such as diaxopam was used, or if at some state the anxiety and depression were noticed, we used nortriptyline or imipramine, and bizarre behavior at times was controlled by phenqthiasines, and a great amount of hostility and aggression responded favorably to hydroxyzine series. As an appetizer first and as an anti-serotonin agent later we used cyproheptadline (we are doing some study into the effectiveness of this medication). Stimulants such as methylphrendiate were utilized only for very hyperactive children and for lengthening the attention span. I shall repeat again that none of these or other medications that we used was given on a continuous basis and we had to switch from one to another according to the particular symptoms shown by the youngster.

For improvement of fine motor functioning, getting all the muscles involved in action, we applied the techniques of recreational therapy and physical therapy. These activities also were used as a means for development of relatedness in the youngsters as well.

Vestibular sensation as one of the proprioceptive sensations has a particular role in reaching the autistic child. In several studies it has already been noticed that there are some functional disturbances in the vestibular activity of the autistic child and that many of the autistic behaviors can be related to this disturbance such as toe-walking, fear of rough housing, rocking, whirling, being amused by spinning objects, fear of high places, and many others. Many of these behaviors can be viewed as a reflection or as a result of compensatory efforts to correct the vestibular disturbance. On the other hand, there are some phychoanalytic studies to indicate the role of vestibular sensation in the development of personality of normal children. On the basis of these findings and theory we proposed the idea of vestibular rehabilitation and we used different techniques such as jumping from gradually increasing high places, swinging the child by being held by two people upward and downward, or purposely having the child lose his balance and then reassuring him and letting him know that he is safe. Rolling down a hill in a cardboard box was another technique used.

We saw results of vestibular rehabilitation in the development of speech and in relating to others. We are still working in this area to increase our understanding, especially for the reason underlying the rehabilitation of the vestibular system either as a channel of sensation or as a developmental necessity for organization of the ego. I have found the concept of vestibular disturbance and vestibular rehabilitation to be most helpful in dealing with our children.

There are many other things that we did with and for these children which will be discussed on a later occasion. I should stress that one of the best advantages that we had was utilizing the volunteer manpower which helped us to have such fresh energy, unprejudiced kind of work, and best of all an opportunity for not getting trapped to the "routine of staff."

Sample

We started with four autistic children between the ages of four and seven about two-and-a-half years ago. Last year one of them started private school with speech and considerable ability to relate to others and children of his own age. The second child has a good initiative kind of relating with good speech (however, still occasionally echolalic) and best of all starting to eat, something she was not doing before. The third child lost most of his autistic behavior, graduated to our Day Center Program where some limitations in his learning capacity were diagnosed. The fourth child who was in worse condition of all, now recognizes others, has a good relationship with his mother and adults, has started to relate to other children, and his speech is increasingly developed.

SUMMARY

In this article we have briefly described our experiences in establishing a nursery program for autistic children at Fairlawn Center. We utilized an integrative approach therapeutically and administratively with the ultimate goal of helping these children relate better to other human beings. The essential elements of this approach were: (1) to work closely with the mothers and involve them in a very meaningful way with the program, (2) to work as well with other family members and significant others so that they might interact with the autistic child in an integrated manner, (3) to utilize where practicable the contributions of psychoanalytic theory and techniques, including direct interpretation and opportunity to re-experience psychosexual stages of development free of anxiety, (4) to apply those features of behavior modification which seem to have beneficial results such as reverse conditioning and desensitization without becoming bogged down by the traditional behaviorist's emphasis on consistency and repetition, (5) to develop games and treatment approaches based on sensory stimulation or deprivation, (6) to involve the children in group therapy in which they could learn how to relate to each other, (7) to approach them from an educational viewpoint, to help them realize the intellectual capacity that seems to be there, and (8) finally, to utilize different organic approaches which are designed to enhance the youngster's psychological well-being by altering his physiological condition through physical and recreational therapy, medication, and vestibular rehabilitation. Our program was developed to meet a need in the community, and not a great deal of attention was paid to "proving" our results with a sophisticated research design. We nevertheless feel that the youngsters have improved with our approach, and we are supported by the fact three of the initial group are functioning in academic settings geared to handle less severely disturbed children.

Dr. Johnson:

Working with this dedicated multidisciplinary staff, one can readily understand how easy it is to direct a comprehensive program for emotionally disturbed children and adolescents. My satisfaction in the interest and enthusiasm demonstrated by the staff does not, however, overshadow our acknowledgement of the efforts of our participating parents and loyal volunteers. I would hope that the description of our program for autistic children might serve as a model for those professionals and parents in the audience who have experienced frustration and despair in their attempts to find appropriate treatment programs for seriously emotionally handicapped children.

There would appear to be an ever increasing need for us to communicate the treatment needs of our emotionally disturbed children to local, state, and federal authorities, whether they represent mental health, the legislature, or the community in general. The parents of our autistic children have established two local chapters of N.S.A.C., and were instrumental in gaining the support of our local community mental health programs to establish our pre-school nursery and outpatient services. The volunteer ladies and students of Fairlawn have enthusiastically demonstrated their interest in our autistic children by encouraging the participation of local groups and agencies in the funding and planning of various projects such as camp-outs, "Elsie The Cow," and decorating the children's residence.

On behalf of the Fairlawn staff, I would like to thank the Society for allowing us to describe our program for autistic children; we hope to see you tomorrow morning on the Fairlawn tour, at which time we would appreciate your comments about the program. Our staff and myself would welcome questions at this time or later tonight in the fireside discussion; you are also welcome to visit our booth where we have assembled some audiovisual and other materials from the Fairlawn program.

PRE-VOCATIONAL TRAINING PROGRAM AT BENHAVEN

Amy L. Lettick, B.S.
Director, Benhaven School,
New Haven, Connecticut

Because so many NSAC members heard Benhaven's presentation at the 1971 annual convention at Nashville, it is probably unnecessary to describe to this group Benhaven's organization and philosophy. For those who missed our presentation last year, let it suffice to say that Benhaven is a year-round day school for severely handicapped autistic and brain-damaged children, several of whom also have additional handicaps of blindness or deafness. The school is located in New Haven, Connecticut. At this time there are 30 children enrolled with a staff of 121 adults. For anyone who wants to know more about our methods or philosophy, or the actual mechanism of evaluating, reporting and training, copies of our latest book, Benhaven's Way, have just come off the press and describes both our methods and our progress through January 1972. You may pick up a copy here or you can order a copy by writing the school itself.

In my talk tonight, I plan to set forth all the new programs which have developed or are in the process of development since June 1971 when I last addressed this group.

In a general overview of the changes that have occurred, several areas stand out as exceptionally significant. The first would be our demonstrated ability to deal successfully with autistic children who are also totally blind or deaf. We have had two such students for a year, and, in addition, are about to admit our second legally blind child. Personnel for the state schools for the blind and deaf help us with learning braille and sign language, while at the same time, they are asking us to help them with handling disturbed or learning disabled children who are not handicapped enough to need to be enrolled at our school. The avenues of interchange of disciplines are opening.

The consequences of having a deaf child have led to the second outstanding development. For the sake of our deaf child, our staff has learned sign language, and the result of this new means of communication for both child and staff has produced what we feel is going to be a revolutionary effect upon the teaching of language to the handicapped everywhere. Mrs. Robin Lovell, our speech therapist who teaches our staff as well as our children sign language, expects to present a paper on her findings at the November convention of the American Speech and Hearing Association.

It occurred to Mrs. Lovell that she must examine not only the mute child's level of psycholinguistic functioning, but also our methods of interacting and communicating with that child. The outcome of our children's educational and social adaptations are directly related to their language competence and not their speech performance. In the past, the goal was normal or near normal psycholinguistic functioning, which means the development of a moderate degree of articulation proficiency and aural receptive language. What Mrs. Lovell has done is to add gestures and sign language to the communications system. This has provided the language information absent in the speech-and-hearing based method. The use of the combined manual-oral method has opened new pathways of communication for our children, their parents and our teachers. The method has: (1) allowed us to teach language and reading and writing skills to our children who could not learn these skills previously because we did not know how to communicate with them; and (2) allowed the children who could not develop adequate articulation skills to learn and use language to communicate what they can learn. The results of Mrs. Lovell's program, involving total communication using sign language simultaneously with speech and written language, are gratifying. Six children, who could not understand the symbolism of a spoken word or of a printed word on a piece of paper, are now able to grasp the symbolism of consecutive motor acts which constitute sign language and finger spelling while they are listening to spoken language, and are using signing for expressive language. Some have also started to try to talk, thereby showing that the use of one mode of communication does not necessarily stifle the emergence of another mode of communication, but may rather stimulate such development.

We are teaching other children in the school to sign also, so that not only the staff but the children can communicate with each other, whether they are the ones who need sign language or not. Directions for work are presented in whatever means of communication a child can accept most readily. We have translated the Distar Language Program into sign language for two of our boys, and it is as successful for them as it is for the non-signing children who use the original version. Number concepts and formal arithmetic are taught in sign language to these children successfully. It is fascinating to be able to watch the thought processes as the children think aloud in sign language while they do their work. We frequently see these children talking to themselves during the day, getting the same satisfaction from signing that speaking children get from softly or internally talking to themselves in spoken language.

We adapt the use of sign language in ways specifically suited to our children. For one boy who hears and understands normally but cannot talk because of a malfunction in his breathing apparatus, we talk to him and he reads written language, but he responds by using sign language to us or else he types or writes back. In sign language he communicates his simple wants, e.g., to go to the bathroom, to be given supplies; in sign language he responds to questions with full sentences; he responds to spoken or signed directions in his pre-voc program; uses his signing in his arithmetic, reading, and typing lessons. Through sign language, immediate interaction with other human beings, formerly an impossibility for him, has become a reality. In the case of another child, we sign to him since his ears are not his effective means for reaching him but rather his eyes, and then we expect back from him appropriate action in response to our commands.

We now have regular classes meeting at the school every other week for the parents and siblings of our sign language children so that the families can learn what the children are learning, and therefore the children will no longer be aliens in their own homes. A touching remark was made by one happy father at one of our classes who stated, "For eleven years I have been talking to my son, and last week he started talking back to me."

Let me stress again we have not eliminated attempts to teach the signing children to speak, for it has proven to be possible that the opening of one channel of communication may eventually stimulate the opening of alternate channels.

Another area of great significance at Benhaven is our prevocational training program. All parents of handicapped children like ours have grave uncertainties and fears about what the future holds for their children, and it is Benhaven's feeling that for those of our children not capable of returning to normal schooling it is our obligation to prepare them to be partially self-supporting. The Federal government has awarded Benhaven, through its Department of Vocational Education, a grant of approximately $31,000 to carry out a ten month research project which has begun this past May. The areas to be explored in terms of a child's work capability have been broken down into three major areas, each lasting eight weeks.

The first section deals with acts of daily living and self-care. Unless we can equip our children with the basic ability to care for themselves, it is highly unlikely they can proceed to more sophisticated endeavors. It provides a source of slight amusement to the members of the staff to speculate as to what erudite educational journal will be willing to accept an article on the result of our research into the best way to teach a child the essentials of cleanliness following a bowel movement. While such a topic may appear ill-suited to a learned journal or even to be mentioned at this time, we must face the fact that basic requirements of daily living must be taught, and we don't see other people working to fill the gap in the areas we feel are important. Therefore, as part of the first section of their prevocational training, our children are taught how to take a shower, how to brush their teeth, how to comb their hair, how to prepare a meal, and other necessary acts. The lesson plans which are evolving out of our need to develop structured methods of teaching such lessons will become available to others.

The two other eight-week areas to be covered in our prevocational training program are grounds and building maintenance and production and assembly work. The thrust of our training program is aimed toward service occupations rather than production of the sheltered workshop type of article such as ash trays and hot plates so frequently and sadly associated with the output of the

the handicapped. In these days of burgeoning populations, the need for training helpers in the line of service seems much more logical a field for our efforts.

Mr. David Freschi is project director of our research project and has taught our staff to use precision teaching techniques. These techniques with their accompanying record keeping are providing accurate records of the results of our teaching methods and are allowing us to redesign our techniques immediately if we see they are not adequate.

Our prevocational training children spend 30 hours each week of the 42 which are school hours in activities directly related to prevocational training. This does not mean that they no longer have reading, writing and arithmetic. It rather means that such subject matter has now been channeled into relevant form so that, for example, the reading is now the reading of directions for carrying on training activities, while the arithmetic might involve the arithmetic of running our little store or drawing up a bill for stationery printed in our print shop.

While we are talking about arithmetic, let me insert a word here about my feeling concerning the use of modern math. While insight into why something happens is desirable, it has never prevented a television viewer, a telephone user, or an automobile driver from performing his task if he doesn't understand what makes his particular machine function. He has been taught the rote operations that produce results. That, indeed, is how most of us adults learned arithmetic when we were children. The fact that some of us may have gained insight into the process does not deny the fact that the majority of the present users of practical arithmetic are functioning equally as efficiently without that insight. Therefore, it is the feeling at Benhaven that children like ours, and I would venture to say many children not like ours, should not be saddled with the presently popular objective of modern math, to get them to understand why they do what they do, but should be allowed the use of any or all mechanical aids, including fingers, Unifex Cubes, rote, Count-A-Ladders, and so forth, to achieve the desired arithmetic skill. We go even further. If a child is too handicapped to learn arithmetic computation in any of the above ways, we will teach him to do so with an adding machine, simply by having him memorize procedures just as one learns to push certain buttons or manipulate dials on a radio or television. Our prevocational children's arithmetic will doubtless be completely adequate for the future if they can be taught to add, subtract, divide, multiply, make change, tell time, use measurements, and know a few fractions. We now have children using all the methods we have described for learning arithmetic, including using the adding machine and modern math. We modify our modern math and use it in conjunction with mechanical aids. We do not state that no children can benefit from modern math methods; some of our children understand it and enjoy it immensely, but they are five or six out of the 20 of our children who have developed sufficiently for formal math. We urge others to view our position thoughtfully and ask themselves, too, whether they could not make learning easier and just as effective with more simple, direct methods of teaching it when children are so handicapped that it will be an accomplishment simply to learn how to do something without understanding why what they do works.

To return to our prevocational training program, its significance lies in its development of quantitative proof that children as severely handicapped as ours can still become productive and partially self-supporting. At this time, one of our boys spends a half hour per week working in one of the greenhouses belonging to the parks of the City of New Haven and another student is the salesman in our school store which opens at 4:20 every afternoon. Two of our boys are being trained to handle the weekly requisitions for supplies from our staff, and all of our prevocational children and some of our younger children are engaged in growing vegetables on a large plot of land which has been lent to us for this purpose. Our children prepare two hot meals per week at lunch time and on Saturday a grinder factory comes into existence with an assembly line at which each child places one ingredient of the grinder on the sandwich and the sandwiches are thereafter sold. Children who supposedly were hopeless are earning money operating our print shop press, turning out stationery, announcements, business cards, and anything else which will fit on our small mechanical printing press. Our children run, completely independently, a small laundry. Instructions for using equipment constitute reading lessons that are part of this activity and now the children wash the clothes, dry them, and pack them in an ongoing, all-day operation in which our staff bring in their laundry and then leave donations, since many of our children are still too young to be earning money.

We have offered our prevocational training service to the area towns to be used in the hours before our children come to school and in the hours which would be considered after-school time by the public schools in order that those children who do not attend Benhaven, such as those in trainable or educable classes in public or private schools, who are ready for prevocational training and yet cannot, because of age or behavioral problems or disabilities, step into a traditional rehabilitation workshop, may come to us for the training to bridge the gap that exists at the present time for such children.

We have involved a group of professionals, businessmen, and manufacturers as a citizens advisory committee in our prevocational training project. These people are interested in lending either their experience or their facilities as means of helping our children learn the skills and attitudes involved in the world of work. Our project will be concluded in March, 1973, by which time copies of the results of our project will be made available through the Department of Vocational Education. The importance of such a project, of course, is the fact that it will encourage others to recognize that children like ours need not be consigned forever to the ranks of those who constitute a total burden upon society.

Another interesting new aspect of Benhaven's work is the methods we have developed for the training of those who work with our kind of children. In this area we have developed an ongoing program for training paraprofessionals and also a program for an intensive one-week course for administrators or teachers who want to take back with them Benhaven's teaching techniques and methods for reporting and evaluating. We have developed a one-day visitation during which a teacher or administrator can work intensely in the area that interests him. We have also almost finished programming an hour-long video tape, which will be available for rental, describing Benhaven's methods of operation.

We are also scheduling for next year an institute for professionals in the field of child education at which time we will present 15 lectures divided into five groups of three each. These will be held at Benhaven on three successive Tuesdays during the months of October, January, February, March and April.

This institute has grown out of a pilot program we developed last year with Mrs. Vera Moretti, our music therapist. Mrs. Moretti presented three lecture demonstrations to area professionals in the varying techniques for eliciting speech through music - differentiating which techniques should be used with children with varying disabilities, demonstrating ways of changing behavior by music, and discussing sources of materials and equipment. To satisfy the obvious need for direction evidenced by the enthusiastic response to this pilot program, we have planned our five part series for next year, each focusing on a different aspect of our practices. In October, Daniel Davis will lecture on the structured development of socialization and recreation. In January, David Freschi will discuss the design of our prevocational training program. In February, Mrs. Lovell will lecture on the use and results of incorporating manual expression in language work with our non-deaf children. In March, Mrs. Moretti will repeat her outstanding series of last year, and in April, Mr. Freschi will deliver three lectures on precision teaching and its effectiveness in developing and refining successful teaching techniques for our children. Also, in terms of training as a public service, we have invited all area towns to send professionals in the areas of language, speech education and music to come, by appointment, at no charge, during specific weeks of this and next year to observe Mrs. Moretti at work with younger mute or older verbal children and then to confer with her.

As another aspect of training, we have graduate students doing practicum work for course credit. We are also offering graduate course work in specific areas such as music therapy for college graduates who will work for a period of six weeks under the specific training of the specialist in their particular area.

There are several other interesting projects being carried on at Benhaven. Mr. Davis, in addition to having developed his strategy for socializing our children, which will be the subject of his own presentation at a later convention, is now doing research on a project measuring the relationship that may exist between motor and cognitive development.

Mrs. Moretti is adapting yet unpublished scales which were meant to measure behavioral developments in terms of music therapy into scales which hopefully will predict whether a mute child will speak.

Through the efforts of David Freschi, Assistant Director of Benhaven in charge of administration, much of the work that is carried on at Benhaven has now been adapted to precision teaching techniques and has been structured into quantitative, reportable sections. The effect on both the progress of the children and the increased competence of the teachers reveals that this technique for measuring whatever methods are used is of immense benefit.

Benhaven's outpatient diagnostic clinic is also functioning effectively for those children who cannot attend Benhaven either because of their age, their specific combination of handicaps or the fact that they live too far away to attend our day school. We evaluate children in our diagnostic clinic, drawing up year-long programs setting forth specific activities to be carried out in every area of development, and then we re-evaluate children periodically. Two have developed to the point that they were able to be enrolled as full-time students after this out-patient training.

Also, we now have working at the school as an aide, a brain-damaged adult who, as a result of a tumor during his childhood, was severely motorically impaired. This 32 year-old man, holder of a Master's degree, is brought to school several days a week and laboriously settles himself into his chair before the children arrive. Two boys come to his station, one at a time, and he proceeds to teach them arithmetic, language or reading in a competent fashion. The point I wish to make is that Benhaven does not feel its concern for the handicapped must stop just because someone became 21, and therefore we are very happy we can use a handicapped person to help our children. We hope our youngsters will turn out to be as successful in working around their handicaps as this young man, and we hold him up as an example to the staff as to the possibilities open for our children.

This leads me to the one area which is my own personal project at Benhaven, the one I have left for last, and that concerns the future for these children. It is the feeling of those of us who have worked so intensively to demonstrate that these children can change, that to have done the amount we have done only to have them return home at the age of 21 and eventually wind up in an institution, would constitute a very real reason for not having Benhaven at all. What would be the point of teaching the children to read, to write, to communicate, to work, if there were not ahead of them somewhere an opportunity to use the skills which they have acquired through such effort? At the present time, to the best of our knowledge, no plans are being formulated for children like those at Benhaven in terms of the rest of their lives, and it is this life-time commitment to these individuals which Benhaven has made.

It is our intention to develop a comprehensive facility based on a farm with small houses containing a maximum of eight adults plus staff members dotted around the farm. The residents of the community will find work opportunities within the farm itself, or if they are on a more advanced level, can go elsewhere to work during the day and return for their social, residential and recreational needs at night. We would like eventually to have on our farm a residential unit also for children who are under 21, with our school building, preschool, outpatient clinic, prevocational and vocational training workshops right on the farm. In this way, those children who can live at home will do so, and we will be able to provide residence for children who really should not or cannot be living at home, and will also have an opportunity to do research on the relative merits of 24-hour structured living as opposed to seven-hour structured learning. The oldest of the children at Benhaven is now 17 years old. The goal we have set for ourselves is that by the time they are 21, the facility which we envision will be in existence and ready for these children. It will require the involvement of government agencies such as Aid to the Permanently Disabled, Vocational Rehabilitation, and any other agency we can think of which should play a part in assuming responsibility for such people as they mature.

Do we have any quantitative data for you? Yes, we do. Our figures must always of necessity be based on comparing our children to their own base lines since there are no control groups available. We have found that: (1) Since his enrollment in February, one formerly mute child now has a speaking vocabulary of approximately 25 words.

"Parenthetically, I must amend this statement which was made on June 1, the date this address was completed. Since June 1 this child has learned so many words it has become impossible to keep a count. He is now speaking in three word sentences."

(2) In the course of preparing our annual reports this month, we have found that four supposedly hopeless children have made enough progress to warrant notifying their local school systems that within one or two years, if this progress continues, the children can be returned to the public school system. (3) One year ago, we had one class consisting of six children. This class met for 30 minutes each day with three teachers. That group has developed into a group of seven children that meets almost three periods per day with only one teacher and one aide. In addition, we have eight "mini" classes of two or three children each, including one class devoted to instruction in sign language. (4) More than 50 percent of our children are in our prevocational training program. Two boys have started helping to run the supply system in the school. Ten children can operate the printing press. Sixteen children can operate the school laundry equipment independently. The children of Benhaven have earned during the course of this year $210.00 and after discussion, the more developed students have voted to donate their first $100 to NSAC to help other children elsewhere. I am happy to be the bearer of that gift tonight. (5) The older children have started on a program involving peer judgment. Precision teaching charts are being kept with the hope that the first really accurate picture of the personality development of the children may be put together and made available.

For those interested in more specific data, I'd like to use figures from a report submitted in June, 1972, by our school educational diagnostician. The combination of data from a computer cloaked in the language of a poet is too rare to spoil by summarizing, and so I'd like to quote verbatim:

"Although standardized tests seldom compare the latent capabilities of our children or their unique approaches to problem solving, we administer a battery of examinations for the purpose of obtaining a crude appraisal of each child's functioning level. The battery includes tests of perception, motor and cognitive development, as well as verbal and non-verbal language."

Fifteen children were administered this group of tests last year and again in 1972. The results of this comparative evaluation revealed that:

(1) 50 percent of the sample population improved (six months) in perception as measured by the Frostig.

(2) 60 percent of the children gained (twelve months) in their performances on the Ayres.

(3) With the Columbia Mental Maturity Scale, a test of non-verbal reasoning, 93 percent of the group demonstrated higher scores (four months); and

(4) 82 percent of the children progressed (five months) in their psycholinguistic development when tested with the ITPA.

Let me not leave you with any misconceptions. The achievements during the year of these 15 autistic children, although significant, has not kept pace with their chronological age. Let us also remember, however, that these are the children, to borrow from T.S. Eliot, "who have been fixed in a formulated phrase." These are the ineducable, the apathetic and unresponsive, the withdrawn and bizarre.

These are the children who have been wriggling on a pin of hopelessness. Benhaven has not performed miracles, but we believe that these children are learning.

Have we had any failures? Yes. This year we are regretfully suggesting dismissal for one boy because we have tried as hard as we know how and cannot help change his life significantly. He is learning academic skills, but grows more and more dangerous to himself and others. All our efforts, employing our whole repertoire of methods for changing his behavior, have proven ineffective. We find it increasingly impossible to keep him safe and keep others safe from him. Since he will have little need for his academic skills if he cannot control his behavior enough to function more normally, we are trying to find a more appropriate alternative for this child. Our professional integrity will not allow us to keep a child when we feel our efforts are unproductive. Not only would it be wasteful of our time and the child's time, it would also prevent our giving assistance to another waiting child whom we could help if the space were available for him.*

From what I have discussed this evening, it should be apparent that while there is much to be done in providing services for children like ours, much is already past the stage of planning and in the stage of doing. Doubtless many other projects will develop, such as for example, applying the growing knowledge of individual circadian rhythms in combinations with nutrition in the scheduling of work or study activities of children and adults. This field of chronobiology should have extreme significance in terms of education of all children since it explores and utilizes the rhythmicity of peak efficiency periods of humans, and such knowledge can add immensely in terms of guidance for all young people who must determine their futures or have their futures determined for them. Benhaven intends to provide the testing grounds for meaningful research related directly and indirectly to our children.

In conclusion, let me urge all of you who live outside the State of Connecticut, which has exceptionally fine laws protecting its children, to join with parents of other handicapped children, those whose children are not autistic, so that laws which cover all the handicapped can be passed. Then these laws would be helping your children too. Without the

*Since this paper was delivered, this same child has responded to one last new approach we are trying, and is doing so fantastically well that if his progress continues, there would be no question of failure for him or us.

law first, financed by the state afterwards, there is very little cause to think one can accomplish what has been accomplished in Connecticut at Benhaven.

May you take heart from the glimpse which I have given you of what can be done when there is adequate support of well-organized initiative. May Benhaven's progress inspire you to create from the non-existent the actual, from the supposedly impossible the possible, and from the non-life of untapped potential the opportunities for fulfillment for our children which are the rightful inheritance of all people everywhere.

THE HANDICAPS OF AUTISTIC CHILDREN

A Review of Some Aspects of Work in the United Kingdom

Lorna Wing, M.D.
Institute of Psychiatry
Maudsley Hospital, London, England

In this paper I shall outline some of the research on early childhood autism which is being done in the United Kingdom and the effect it has had upon concepts of the nature of the condition. I shall also mention the practical applications of these studies in education and management. I shall concentrate upon the theories and practices of the workers who view the behavior disturbances of autistic children as secondary to organic impairments of the central nervous system. This particular approach has greatly influenced the policy of the British National Society for Autistic Children so I will include a brief account of what this Society has done in the last ten years and what it hopes to do in the future.

Clinical Descriptions of the Autistic Syndrome

In the U.K. (as in the U.S.A.), ever since Kanner first described the autistic syndrome (Kanner, 1963) there has been a continuing argument about its definition, some workers including a wide range of children, while those at the other extreme try to limit the diagnosis to a very small group indeed. This argument is still unresolved and the different attitudes make it hard to compare results of studies done in different centers. However, the conflict has had a positive effect in stimulating clinical observation and description. (e.g. Creak, 1961; Cunningham 1966; Rutter 1966a; Wing J.K., 1966; Wing L. 1970, 1972; Wolff and Chess, 1964;).

This clinical work showed that even the children who most resembled Kanner's original description had a whole series of impairments of function and disturbances of behavior in addition to the social aloofness, obsessive desire for sameness, attachment to and skillful manipulation of objects and the muteness or non-communicative language which Kanner listed as the points of major importance. These additional problems included odd responses to sensory input (especially auditory and visual); preference for the use of touch, taste, smell and movement to explore the environment; a tendency to use peripheral rather than central vision; severe limitation in comprehension of speech; abnormalities in spontaneous speech resembling those found in aphasia, in contrast to the marked ability to echo exactly other people's phrases; severe limitation in the comprehension and use of any non-vocal language such as gesture, mime, facial expression, the manual signs of the deaf, etc.; among those who could learn to read, an extraordinary discrepancy between good reading performance and very poor reading comprehension; marked inability to copy movements made by other people; problems in differentiating right-left, up-down, back-front; a tendency to abnormal stereotyped bodily movements; fascination with simple sensory stimuli, such as bright lights, spinning objects, mechanical sounds, tactile or even painful sensation, the last named sometimes leading to self injury; finally a remarkable ability to store memories of things exactly as they were first seen, heard or felt. These abnormalities varied in severity in different children. They also varied with age, being at their worst from 2 to 5 years but tending to become less marked with increasing maturity.

Kanner had mentioned many of these problems, but had postulated that the underlying cause was a profound lack of affective contact, without analysing how this could account for all the phenomena. Other psychiatrists all over the world seized upon this hypothesis without studying the detailed clinical descriptions. Many of them started to apply the label 'autistic' to any child who was socially withdrawn. Since social withdrawal is extremely difficult to define, it is not surprising that the originally precise diagnosis came to be used almost indiscriminately.

In a sense, the clinical details listed above had to be rediscovered and given their proper significance. This happened in the United Kingdom mainly in the 1960's, in a very different climate of psychiatric knowledge and opinion than was current in the U.S.A. in the 1940's. A substantial group of psychiatric and other workers in the U.K. were not psycho-analytically oriented and were therefore less inclined to attribute a primary emotional cause to all psychiatric conditions. Advances had been made in the clinical study of other childhood handicaps, in neurology and in psycho-linguistics, all of which were relevant to the problems of autistic children.

Comparisons with other Handicapped Children

A number of studies comparing autistic with other psychotic children and with children with sensory and perceptual handicaps, children with specific language abnormalities and severely mentally retarded children have been and are being carried out and are helping to clarify the diagnostic confusion.

Anthony (1958a & b: 1962) looked at a wide range of children whose behavior could be called psychotic.* He differentiated three types; a very early onset group; a group in which regression occurred between the ages of 3 and 5, and a group with onset in the later years of childhood.

Kolvin and his co-workers (Kolvin, 1971) described and investigated the same groups. The children with the earliest onset tended to show the disturbances characteristic of childhood autism. Those with onset between 3 and 5 were a mixed group, many with evidence of gross brain damage, while the children with late onset were most likely to have symptoms resembling adult schizophrenia. Since they found relatively few children with onset in middle childhood, Kolvin and his colleagues compared in detail only the early onset and the late onset groups. They found differences in symptoms, course and family background. The early onset children came from parents who tended to be above average in education and occupation and who had only the same risk of being schizophrenic as the general population. The late onset group did not show the social class bias and their parents were much more likely to be schizophrenic than the general population. In fact, the risk of schizophrenia in the parents of these children was similar to that of the parents of adult schizophrenic patients. The symptoms shown by the early and late onset children were different. For example, hallucinations occurred in the latter group but not in the former. This is one example out of a number of studies which have shown that early childhood autism and adult schizophrenia are quite different conditions. I must emphasize, however, that in the U.K. it is customary to define schizophrenia much more narrowly and precisely than in the U.S.A.

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*Different schools of psychiatry define the term psychosis in different ways. In child psychiatry the only way out of the confusion is to adopt a strictly operational definition:- that is, to say that a psychotic child is one whose behavior is in all or most areas continuously strange and unpredictable for his mental age. There are many different patterns of psychotic behavior of which early childhood autism is one example.

Comparisons of autistic children with those with sensory and perceptual problems (Blank 1959; Keeler, 1958; Wing, 1969, 1971) have shown the similarities between the autistic syndrome and a clinical picture which can be produced by congenital deafness, blindness or a combination of deafness and blindness. However, it seems that some causes of these sensory defects, such as maternal rubella and retrolental fibroplasia, are more likely to produce an autistic picture than others. It can be suggested that a combination of sensory defect with central brain damage is necessary for the characteristic behavior to appear (Chess, 1971).

Language Problems of Autistic Children

An outstanding feature of autistic children is their difficulty in comprehending and using any kind of language. Therefore, it is of interest to compare autistic children with children who have severe developmental receptive language disorder (often called congenital receptive ophasia) but who are not psychotic in behavior. In a recent study, the present author (Wing 1969, 1971) found considerable similarities between these two groups. Both had unusual responses to sound, problems in comprehension of speech and abnormalities of spontaneous (non echoed) speech. However, there were two important differences. Firstly, both immediate and delayed echolalia were very much more frequent and pronounced in the autistic children. Secondly, the aphasic children, unlike the autistic children, could understand and make use of non-vocal language and therefore could communicate with and relate fairly normally to other people through gesture, mime and facial expression. They could also learn to read with understanding. Rutter, Bartak & Newman (1971) compared a group of autistic boys specially selected because they had IQs in the normal range (70 or above) with a group of boys with severe developmental receptive language disorder with similar IQs. The similarities and differences mentioned above were confirmed. In addition, it was noted that autistic children were even more handicapped than the other group in comprehension of spoken language. The autistic group also differed from the other in that they had virtually no inner language or symbolic play. Incidentally, the authors found the expected social class bias only in the parents of autistic children, but there were no differences between the two groups of parents on measures of obsessionality, or emotional warmth as recorded in response either to the handicapped child, or towards a sibling or the spouse. This is particularly interesting in view of the fact that the autistic children were of normal intelligence and had the classic Kanner's syndrome. Other comparative studies done in the U.K. have also failed to confirm the theory that fathers or mothers of autistic children are cold and obsessional in personality (Creak & Ini, 1960; Kolvin, 1971: Pitfield & Oppenheim, 1964).

One of the most fascinating and original studies on the language of autistic children has been done by Ricks (1972). He recorded normal babies in the stage before language acquisition and continued up to the point when they first attached a verbal label to a category of objects. He compared them with young autistic children, mongol children and other non-autistic severely retarded children, none of whom were using any words. Out of a whole series of findings, I shall mention only one. Normal babies made noises to indicate feelings. (Those studied were:- desire for something, frustration, greeting, and pleased surprise at a novel stimulus). These noises could be identified by any parent even if the baby came from a different language background - there seemed to be a kind of universal baby language. The mongol and other retarded children, though older, also used these recognizable baby sounds in the same situations. Autistic children on the other hand, though they had specific noises for these feelings, used sounds peculiar to themselves alone. They were not even shared by other autistic children. Their own parents knew what they meant, but no one else. I should point out that the parents of autistic children were able to identify the normal baby noises so the fault did not lie in their lack of ability to comprehend baby language.

Psychological Investigations

The results of these studies suggest that autistic children have a global language problem affecting all types of communication, similar to but more profound than that found in specific developmental receptive language disorders. As well as this, they also have abnormalities in the way they deal with information coming to them through their senses. The psychologists Hermelin and O'Connor (1970) have demonstrated these problems in the laboratory in a long series of carefully designed experiments. Among many interesting results they showed that autistic children looked at things for much shorter periods than normal children. This applied to inanimate objects as well as to human faces. In fact the autistic children looked longer at human faces than at other things, suggesting that the impression that the children gave of visual avoidance was a spurious one. The children gave chairs and tables even shorter glances than they did people, but the chairs and tables could not complain and make hypotheses of emotional withdrawal as the human being could. Autistic children got much less help from using their eyes to guide them in a manual task than did normal children of the same mental age. In an experiment to examine social responsiveness it was found that a group of autistic children allowed to wander freely in a room spent more time near a person sitting in the room than they did near pictures, toys, music and a rocking platform that were also provided. However, compared to a group of non-autistic children, they responded less if the person in the room spoke and gave commands. The authors also showed the great difficulty autistic children had in using expressive gestures. (This last point has been investigated further by De Meyer (1971) in the U.S.A.). Hermelin O'Connor (1970) pointed out that the autistic child's comparative lack of facial expression and social gestures are indicative of a general difficulty with expressive gestures rather than due to lack of social feelings. In fact, in the light of all their work only a small part of which is mentioned here, they came to the conclusion that autistic, meaning "socially withdrawn", is a completely inappropriate label to apply to these children. They believe (as I do) that autistic children have all the normal emotions appropriate for their mental age, but are severely handicapped in showing them. Many parents who have learned the special language of their own autistic child are of the same opinion.

Relationship between Autism and Mental Retardation

Another area of contention is the relationship of early childhood autism to mental retardation and to the variety of conditions given the unsatisfactory label of 'brain damage syndromes'. Kanner originally excluded children who had evidence of damage to the central nervous system. However, most workers in the field have observed that the autistic syndrome can be seen in association with other neurological abnormalities (Creak, 1963; Lotter, 1966, 1967; Kolvin 1971, 1968, Rutter, 1968, 1971; Wing 1972). Rutter in his followup of classically autistic children into early adult life (Rutter 1966; Rutter, Bartak & Newman, 1971) found that one third developed fits by the time of adolescence or early adult life and in some of the rest, other signs of impairment of the central nervous system had become obvious in the late teens or early twenties. (These complications were most frequent in those who, in childhood, scored below 50 on tests of intelligence.) There seems little reason to exclude children with additional handicaps from the diagnostic category providing that the typical behavior pattern is present.

The relationship to mental retardation is complicated. Lotter (1966, 1967) investigated the prevalence of early childhood autism among all children aged 8, 9 and 10 in an English county. In this age group there were 4.5 children with autistic behavior per 10,000. Two of these had the classic Kanner's syndrome, and 2.5 had many but not all of the typical features. Lotter tested the non-verbal intelligence of these children and found that 56 percent scored below 50 (that is, were severely retarded) 25 percent scored between 50 and 69 (were mildly retarded) and 19 percent scored 70 or over (normal range). It is clear from this and other work (e.g., Rutter 1966b) that early childhood autism can and very often does occur in association with severe mental retardation - that poor results are found because of lack of cooperation. This is hard to maintain when the tester is experienced and can easily get the children to cooperate on some tests but still find that they fail on others. A more cogent criticism is that autistic children do badly because of their perceptual and language handicaps. These factors of course greatly influence a child's performance, but there seems no reason not to apply the same argument in a modified form to all types of mental retardation. The most satisfactory way to approach any mentally handicapped child is to look for his specific handicaps and his specific skills in order to plan a rational system of education, which should be the right of every child, however handicapped. The idea that mental retardation exists as a unitary condition has, on the whole, impeded progress in education. Intelligence is made up of an enormous number of specific skills. Any of these skills can fail to develop properly. If a cluster of important skills is affected, the child will function as mentally retarded. Autism is one example of this situation in which the skills affected involve language and perception. Other groups of skills can be affected, giving different clinical pictures. Even with an autistic child who has a normal or superior non-verbal intelligence, his verbal and non-verbal language development is retarded, otherwise the diagnosis would not have been made.

The situation is further complicated by the fact that all the different elements of the complete autistic syndrome can be found in isolation or in various combinations among children with all grades of mental retardation (or even to a lesser extent among some children with specific learning problems whose IQs are otherwise normal). To take some examples, stereotyped movements, fascination with simple sensory stimuli, hypersensitivity to sound, lack of comprehension of speech, echolalia, use of peripheral vision can all be found in children who are not otherwise autistic. I am currently investigating these problems by interviewing the parents and teachers of all the children who are severely retarded or psychotic, or who have severe developmental language disorders, who live in one area of London. I hope to establish the prevalence of each of the elements of the autistic syndrome, the way in which they cluster together and the association of these problems with language delay and behavior disturbance.

Abnormalities of Memory

Although there are important resemblances between early childhood autism and various other chronic handicapping conditions of childhood, it is nevertheless possible to distinguish the classically autistic child from other sorts of children. One thing which stands out from the study I have just mentioned is that severely retarded non-autistic children do not show in any marked degree the attachment to objects and resistance to change of the classic autistic child. The non-autistic children may have some similar tendencies, but the intensity of the drive to maintain sameness and the complexity of the routines and rituals is lacking. The presence of these behavior patterns seems to be related to the autistic child's abnormality of memory mentioned earlier in this paper. These children seem to be able to store impressions and recall them in their entirety without any differentiation between what is important and what is trivial. Thus the removal of a spot of paint on the window pane of his bedroom may precipitate a catastrophic reaction of mixed anger and fear in an autistic child because to him it seems that the whole room has changed. One child showed this phenomenon to such an extent that he was able to sing accurately tunes from his favorite musical show which had been played backwards on a specially modified tape recorder. (Need I add that the modification to the tape recorder had been done by the child himself?) Hermelin and O'Connor (1970) demonstrated that autistic children could reproduce strings of words which had no particular order as well as they could repeat the same number of words arranged as a sentence, whereas normal children could remember far more words which made meaningful sentences than they could if the words were in a nonsensical string. Rimland (1964) observed and discussed this phenomenon in his book and emphasized its importance. Perhaps advances in knowledge of the mechanisms of memory may eventually cast some light on childhood autism.

Application of Theories to Teaching Methods

To sum up, early childhood autism appears to result from multiple impairments affecting language, central handling of sensory information and the storing of memories. There has also been work demonstrating immaturity of some aspects of physical growth (Dutton, 1964; Simon & Gillies, 1964), which has to be taken into account when formulating an aetiological theory. These findings strongly suggest an organic cause affecting the central nervous system, leading to delay in or abnormalities of specific areas of development. This formulation is of more theoretical interest, since it has had an effect upon methods of education and management. Once the idea that autistic children are of normal ability but are emotionally disturbed is rejected, it no longer appears reasonable to treat them by psychotherapy, or by waiting passively for them to work through their emotional difficulties, or by encouraging them to regress to an earlier stage of development in order to allow them to begin again. Instead, an active program of teaching seems to be called for. This view was tested by Bartak and Rutter (1971, 1972) who compared three schools for autistic children which used different techniques of education. One unit used techniques to promote regression with minimal attention to teaching specific skills. The second combined special educational methods with regressive techniques in a permissive classroom atmosphere. The third unit considered perceptual, motor and cognitive handicaps to be primary and emphasized the teaching, in a structured, organized environment, of specific skills to circumvent the specific defects. This study has only just finished and most of the results have still to be published. However, it is already quite clear that the children learn best if a consistent, structured approach is adopted.

Teachers using a structured educational approach have two main aims. Firstly, to eliminate or reduce behavior problems and secondly, to teach new skills. In dealing with behavior problems a detailed knowledge of each child's skills, impairments and handicaps is of considerable help. For example, if a teacher is aware that a child has limited comprehension of language, she will plan to use concrete non-verbal methods of dealing with temper tantrums or difficult behavior. If she recognizes that some of the children are painfully hypersensitive to some sounds she will take appropriate steps to deal with any situation in which the child might be exposed to distressing stimuli in public. Because verbal explanations and instructions are of such limited value, consistency and a reasonably firm approach are even more important for autistic children than they are with young normal children. The techniques of operant conditioning are particularly appropriate for reducing disturbed behavior in children with severe language problems, as long as they are applied with common sense and are adapted to the child's handicaps.

Many autistic children learn practical skills such as doing up buttons, using a knife and fork, riding a tricycle, if their hands and limbs are passively moved through the appropriate actions. This method circumvents the language problems and the children's difficulties in looking at and copying other people's movements. Teachers and parents in the past have found a variety of ways of helping autistic children to learn, but the major change in this field has been the application of operant conditioning to the teaching of new skills especially speech. These techniques have of course been used by teachers throughout history, but the modern contribution has been to supply a background of learning theory and to apply the methods thoroughly and systematically. In the U.K. as well as in the U.S.A. this systematic application of operant conditioning has produced considerable dissension between its proponents and opponents.

Fortunately, a team of research workers in London (Berger, Hersov, Rutter and Yule, 1972) are currently doing a controlled study of the results of training parents of autistic children to use operant conditioning methods. One of the main questions to be considered is whether these techniques assist the development of the normal, flexible use of language in autistic children. Clinical observation has shown how well many autistic children can store stereotyped phrases. It may be that operant techniques simply teach the children a wider range of phrases to store. This is, of course, valuable in itself. If a child has a repertoire of phrases which he can apply appropriately, this is far better for him than if he has no speech at all. It is however of considerable theoretical interest to ask if a more normal language development can be achieved by operant conditioning or by any other methods. Some modern linguists (e.g., Brown 1965; Lenneberg, 1967; McNeill, 1966) believe that humans learn to use language fluently because of an inbuilt capacity of the brain. It could be suggested that autistic children have no, or a very severely impaired, inbuilt language capacity. It may be that their speech can only consist of stereotyped utterances. Linguists and experts on childhood autism will need to work together if this problem is to be solved.

The Work of the British National Society for Autistic Children

The British National Society for Autistic Children has played a significant part in advances in the U.K., particularly in the provision of services. The Society will be celebrating its Tenth Anniversary this year. During the past ten years, it has opened three schools run directly by the National Executive Committee, five other schools have been opened by local Societies (helped financially by the National Society) and a further school has been opened as a joint venture by a local Society and a local Education Authority. The emphasis in the schools is on teaching in a highly structured environment, placing special emphasis on methods designed to overcome or compensate for specific handicaps (Elgar, 1966). All the schools take children from five years or younger up to late adolescence. They are partly day and partly residential, most offering weekly rather than termly boarding.

The Society has been able to open and run these schools because, in the U.K., it is possible for local education authorities to pay fees for children to attend privately owned schools as long as these schools reach a standard approved by the central Department of Education. The Society has provided, equipped and staffed school buildings, but all pupils are supported by local education authorities. The fees are sufficient to cover running costs.

In April 1970, Parliament passed an Act (The Education (Handicapped Children) Act) which gave the education authorities the responsibility for the education of all children, however badly handicapped. Previously, severely retarded children had been excluded from education in schools run by the education authorities. This most welcome Act was passed after years of work by parents and professional people. It at last recognized that all children have the right to education up to the limit of their capacity. The next step is to ensure that appropriate education is available to all children throughout the whole country. The schools started by the N.S.A.C. have stimulated some local authorities to set up schools of their own. Others have provided special teachers or special units in schools for other kinds of handicapped children. It remains to be seen whether segregated or mixed education works best and which suits which child.

The Society is now planning to open centres for adolescents and adults to provide vocational training and, if necessary, sheltered work and sheltered accommodation throughout life for autistic adults. These centres present more complicated problems of staffing and finance than the schools, but members are confident that these problems will be solved step by step. Another area the Society has to tackle is the provision of suitable education and sheltered work for children and adults who have autistic behavior plus other severe handicaps, mental or physical. Like the National Society in the U.S.A. the British Society has broadened its outlook to cover all children with severe disorders of communication and behavior. This is appropriate because techniques of teaching and managing classically autistic children are successful with other children with severe language problems. It soon becomes clear in the field of communication problems how pointless it is to draw sharp lines between autistic and 'not really autistic' in educational practice, even if this distinction is of great theoretical interest. The question to ask about each child is - what are his handicaps, what are his skills and what can we do to help him?

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AN INTERVIEW WITH A REHABILITATED AUTISTIC ADULT

Barbara Alter & Jerry Alter
Cleveland, Ohio

I'm very glad that Jerry, my husband, Cal, and I are able to be here today to share some of our experiences with you, but as parents yourselves I am sure that you will sympathize with the fact that the latter two of our team are much more nervous at this point than the main speaker.

I had intended to give a brief resume of Jerry's history, but coming out in the car from Ohio, he decided to prepare a written talk and proceeded to do so in about one half hour's time. I had no idea what he would write about himself and it was interesting to find that he had borrowed some of the phrases that I had used in a paper I had written about him earlier. I commented to him about this and his reply was that he was telling about himself and this was the way he wanted to say it, and so I realized from his firmness that this was the way it was going to be, and any further suggestions were not being invited. I said that he could read it aloud to us so that I could time it and make sure it wasn't too long, and he said he had already done so silently and it was six minutes long. Later he did read it aloud to Margaret and Bill Dewey, and he was right.

So now I will very proudly present my twenty-one year old son Jerry. Without his tremendous determination to succeed in being a productive member of society we would not be here today. After he speaks we would both welcome any questions you might have.

Jerry

When I was three years old, I felt awful because I could not talk and for that reason I've screamed for hours when frustrated. I was becoming able to talk at four-and-one-half years, but was not able to talk correctly, which also made me mad. I found it much too hard to accept the fact that I talked poorly but at least I could say metronome, gas, smoke, girl, mommy, car and train correctly. I would call Wendy (my sister) Engy, Shelby (my baby sister) Gelgy and Daddy, Gaggy.

I entered the new Columbus Mental Institution for children called Happy Acres at age five-and-one-half. There my condition had improved greatly. I was seven years of age when I began to talk very good in every way. I was early age six when I, for the first time, started to work on talking correctly, but this took over a year to reach that point. A doctor once showed me a tape recorder and he and I had recorded a two sided conversation and played it back. I was fascinated but was disgusted to hear the poor sounds of speech on my side of the conversation compared with the doctor's words. This apparently made me wish I would talk as correctly as the other people.

I was discharged from there at age eight and went home to stay and began first grade in a public school. I was very proud of my teachers for helping me out, for I was still a very sick little kid. Most other public schools would have refused to accept me and none were forced by law to do so.. Earlier, I could only manage half days. I had still some odd movements and mannerisms and still would throw a few tantrums when frustrated. From a child who almost didn't talk at all I've changed completely into a child who talked almost the whole time. I actually thought out loud, but this used to distract my parents, but because of my teachers I've progressed. I was good in math and I became the best speller in any room I was in, but because autistic children have enormous memories, I could name any state and capitol and/or rattle off the presidents in order and/or identify the proper colors in a black and white T.V. picture by knowing their corresponding shades of grey. But my problems in learning about early history and geography caused me a lot of grief. I did fairly well however, and I was relatively calm although not normal by any means. As a member of a family, I went with my parents to my relatives, etc.

But then as I reached puberty I started feeling worse again, but this time I began feeling just like as if I were always drunk.. Autistic children tend to become very heavy set during puberty after being thin wiry little kids. I was no exception. I weighed 250 pounds as I finished 6th grade at 14 years of age and my odd mannerisms and crying spells and throwing tantrums had increased by several times.

The school felt they could not handle me on a junior high level because of my conduct, which means that I had to be discharged from school and my parents began again to look for a solution outside the home.

My two little sisters were preteenagers and were, for the first time, becoming quite embarrassed by my behavior in public.

My parents told me that I had to be sent away to a state hospital, that I was too nervous to be able to function in any capacity in the outside world. Fortunately, a new adolescent program was starting at Hawthorne State Hospital near Cleveland. But in order for me to go there I must be first admitted to Massillon and this was the very hardest time for me. I've suffered great agonies of hopelessness.

After six months of custodial care at Massillon (unhappy time for me) I was transferred to Hawthorne and it started a new life again for me. When I spent one year there I got sick with tuberculosis and had to be a patient at Hillside Hospital for seven months and finally returned to Hawthorne for one year more. The odd mannerisms improved greatly, my speech, while still very flat in tone, was much more sensible in content.

They have discharged me from Hawthorne since I was well enough to leave and went 6 months at a vocational training school and at age 18 I got a job with an electronic firm in Cleveland which I've held for three years and am living on my own which I've been for three years, but I've lost my job recently. I am getting help which I've always hoped for. The help is from the mental health rehabilitation center. The next couple of weeks a vocational rehabilitation counselor there will help me get a job. The job I'm looking for is an electronics production job in an electronics factory. Welfare will pay me to keep my apartment until I get another job. Wish me good luck.

Audience Participation Portion

Question: Jerry, I wonder if you could tell us, what some of your mannerisms were, if you remember, and also, what made you do them? Was it something that gave you pleasure, or was it something you had to do without knowing why?

Jerry: It was something both for pleasure and got too nervous not to do them, but had to do them because of the extreme nervousness.

Question: What did you do, can you explain some of the ways you acted?

Jerry: Well, I used to do this when I was that little, I used to go like this, you know, swing around like this and flop like that (ed: hand flapping, posturing).

Question: Did you feel better when you did that?

Jerry: Yes, I used to during my childhood years. I did a lot more of that when I reached puberty, but I haven't been doing almost any of that in five years now.

Question: Was it hard to stop or did it stop by itself?

Jerry: It was hard to stop but I stopped by willpower.

Question: What were your favorite studies at school? Did you like music?

Jerry: I liked -- my favorite studies were science. That was in my elementary years.

Question: Jerry, would you tell your experience with us about vitamins?

Jerry: About the vitamins, you know I have been feeling much better on them and so forth.

Question: When did you start them?

Jerry: I was eighteen years old when I started my vitamins, and not only did they help me out a lot and now I am switching over from the candy flavor ones to the small, plainer ball type ones. The first candy ones I have given up and have started the conventional ones with the niacinamide, since the candy flavored ones were too big to swallow. The next ones were the vitamin C pills. I'm switching that over now and the very next ones which I'm still taking are the multiple vitamins, the candy flavored ones, but I am having too much trouble with getting them stuck in the damp weather in my apartment, the moisture getting them sticky and gooey. I've given up with these candy flavored ones and so I am taking the same pills but in a plastic capsule form.

Question: What do they do for you, how do they make you feel better?

Jerry: They make me so that I won't get nervous so much and won't stay up all night long anymore.

Question: Jerry, you went off these vitamins for a while?

Jerry: Yes, I went off them last year and the reason that I did was because after being used to them so much I thought before I went off them, I was thinking that if I ever went off them I would feel better and all of a sudden, I didn't. It turned out not feeling better, but I started feeling worse again, and another thing too you know, after I got off the vitamins for a while last year, I started having odd hand movements, a little bit of odd hand movements started coming back and I started getting too excited and too nervous to sleep at night and I got started again getting too nervous to control my temper and stuff like that. I got too nervous to keep quiet when other people were talking. I'd interrupt a conversation and another thing too, you know, (which probably none of you would know) a very few of you already, including Dr. Rimland, know that when I was in the vitamin C note, that the vitamin C's changed my voice. He noticed that my voice is full down to the chest, and it's been that way since I was eighteen. But last year when I went off the vitamins, my voice started to come through the nose again, not as much through the nose as it used to be like when I was seventeen and younger. When I was in my earlier adolescence my voice was so much through the nose sounding, that my voice sounded childlike or immature and it has always sounded that way until I was eighteen.

Question: Are you now, or in the last three years, had you been on any other medications other than these vitamins?

Jerry: The vitamins are about the only medications that I am taking, but there's only one medication which I'm taking besides the vitamins and that's a teeny weeny tranquilizer pill called valium. I never take that often at all. I only take that every real long while when I feel a little too nervous, occasionally. However, the vitamins have been about the only medication that I have taken for three years now. In fact, before that you know, when I had tuberculosis at sixteen years of age and the treatment when I was seventeen going on eighteen, I had to take tuberculosis tranquilizers in huge doses until the doctor told me to get off them. But before that, I used to take very heavy doses of Thorizine and Stelazine and since I was fourteen and a half. From the time I was eleven until the time I was fourteen you know, for three years I had taken Deaner and Mellerill. I first started taking Deaner for seven, eight months. I was eleven then by the time I was going on twelve I started taking huge doses of Mellerill until I was fourteen and a half.

Question: How did that make you feel?

Jerry: That didn't make me feel any better, it made me feel even worse. And all those tranquilizers sure increased my problems of my self-control and it increased the problem of not keeping quiet when supposed to and made me feel like I was getting too nervous to sit still and too nervous to sit down all the time. It made me too nervous, more so to concentrate and for this reason I called those tranquilizers - DOPE.

Question: Jerry, a number of autistic children have said that they have flashes of light. Have you ever had any type of experience like this?

Jerry: No, I never in my whole life have ever had any flashes of light or any other hallucinations when I reached early adolescence.

Question: I was wondering, as you were learning to use speech and language, can you tell us what it was that helped you know in that learning process?

Jerry: Well when they taught me to learn speech and language, you know, they had some doctor who had a tape recorder for those were just new on the market and kind of crummy sounding compared to those of today, and he fixed the tape recorder up, and now it's fascinating that tape recorder that I used to be eight, and for several minutes I was most interested in it. The doctor had my voice recorded on it and had his recorded on it. It was a two sided conversation and all of a sudden, and he played it back, and all of a sudden I was fascinated. I liked the way that the tape recorder would let you listen to your own voice, but I was very disgusted because by hearing that awful sound of speech compared to the doctor's words on his side of the conversation. And that made me want to talk exactly like the other people. I'd spent more than a year working hard at it.

Question: (Dr. Frank) - Jerry, did you ever have to suffer through a conventional intelligence test, and if you did, could you tell me which parts of it you did well on and which parts of it you didn't?

Jerry: Now, on intelligence tests I've been taking those year after year.

Question: Now, can you remember which parts you did badly on and which parts you did well on?

Jerry: When I was in elementary school, I had done well on the grades 1 thru 6 level and grade 1 thru 8 level, but I've done terrible on the grades 9 thru 12 level and on the college level. When I was in fifth grade, you know, I was able to read on a seventh grade level. Went up to eighth grade level by the time I was in the sixth grade, and so forth.

Question: Jerry, you told me that when you saw people, you looked at their clothes, what were the other things you looked at?

Jerry: I was telling my mother that instead of looking at people's faces, I would look at their clothes, and looking at their hair, and listening to their voices. The girls I was looking at mostly wore dresses, and their hair, their longer hair, and listen to their voices.

Question: Could you understand what people had to say to you?

Jerry: When people had to say to me to get to speak right and get me to talk right and so forth, and I had to use a tape recorder and a dictaphone to try to pronounce the word properly and so forth, and the speech you know, the difficulties I have had were pronounced sometimes occasionally thinking I've pronounced the word right, people criticize me for not pronouncing words right at all.

Question: Jerry, when people talk to you when you were little, do you remember what they said?

Jerry: I didn't quite hear them right, you know, and you know what happened. Well, when people talked to me I heard people and I got things wrong in my mind, like, and I remember exactly one thing and my mom told me that I got wrong and that was that. And when I was a little seven year old kid and there was an old barn about a half a mile from the house in an old field which later became a city and I wanted to walk out to that barn and I said, "Mommy, Mommy, I want to walk out to that barn," and she said, "No, Jerry, that barn's too small." And when I first mentioned that barn, she thought that I meant one of the other barns on the same lot on the other side of our neighborhood. Those barns belonged to a farmer by the name of Dewer, and my mom told me something, I don't know what it is at all, but I hear her wrong, but I thought sure that she said that Dewer's barns were going to be torn down to make room for new houses. And one other thing that happened when I was three years old, I heard wrong from my mom and my dad. My mom and my dad and I were driving by the side entrance of a graveyard and my dad stopped and pulled off to the side of the road close to the graveyard and my dad got out of the car and I thought he said I'm going to finish a ghost, and all of a sudden when he went out (I thought he was going to walk to the graveyard and I don't know whether he did or not) he was walking out towards that direction. And for that reason, the monuments in the graveyard, I used to call them ghosts from the time I was four years old on, I'd say, "Mom," I"d point and say, "Mommy, Mommy, there's ghosts over there."

Question: Jerry, would you tell us who your friends are now? Who are your special friends now?

Jerry: My friends, I've got a lot of friends, you know, my special friends are Mrs. Jackie Smith the social worker at the half-way house called Hillhouse in Cleveland and one of my other special friends is Dr. Baron, a physician who ran a glucose tolerance test on me last May and another one of my special frined's name was Don Hadlock who I used to work for on the job I've lost. Another one of my special friends was Dr. Darnabol who was a school teacher from Hawthorne Hospital. Mr. Curry, another teacher, he was one of my special friends.

Question: Jerry, how do you feel about the treatment you got at Hawthorne, I mean the operant conditioning type? Tell them what they did.

Jerry: I've been thinking earlier that operant conditioning at Hawthorne helped me a lot. How they work that Hawthorne conditioning, well really work you, like in the commissary you buy candy and the kids go home on the weekends to visit their brothers and sisters and parents and other relatives, etc. and when they don't behave themselves they won't get those two rewards. Before the rewarding is cancelled from his behavior they get two warnings you know and those warnings are not verbal as I said earlier, they were written. Those written warnings are pink slips and one or two pink slips are not punishment at all. It is just a warning not to make you before you make the third warning, they warn you before you misbehave the third time or you lose all privileges for six times. And that is that 3 pink slips meant no commissary privileges for the rest of the week. And with six pink slips that meant no weekends at home. And they got punishment in addition to that. For every one of the pink slips that the kids got meant ten laps around the gym - make them do pushups and they also had battery shock things that would shock the kids with called "zappers" and they looked like billy clubs for this reason. When I was a patient on the adolescent ward, I used to call them electric billy clubs.

Question: Did the shockers help you out better.

Jerry: Yes, you better believe it, it did.

Question: Did you laugh a lot?

Jerry: No, I had it more often than the normal children did.

Qestion: Jerry, what did you think caused it?

Jerry: I kept having funny stuff on my mind when I was little I used to do all the time. I used to laugh out loud all the time too. But when I got mad I used to scream and carry on for hours.

Question: Did you like your teachers and people who tried to frustrate or reprimand you and help you? How do you feel about people who work with you?

Jerry: I liked the regular teachers.

Question: What about the others?

Jerry: At first, when I met Miss Disney, I used to like her some in the beginning, but later on I started to hate her. I heard she quit her job at Hawthorne - I don't know where she went to, but for this reason I am glad I don't have to worry about her.

Question: When you were younger, did you have trouble with strange things you saw at first?

Jerry: Yes, I had a terrible time trying to hear, etc. I did hear the conversation and I did hear my parents talking, but I had a terrible time trying to put together the words over the radio and television to make sense to me. There is one thing which I remember very clearly. I didn't hear great on the car radio. Once when I was 9 going on 10, back in the fall of 1960, and there was some kind of a singer like Frank Sinatra or Perry Como had a song, but I think it was Frank Sinatra - I heard the name Frank Sinatra clearly, but definitely, but Frank Sinatra was familiar from that time. But I heard the name Perry Como but I thought the announcer said the singer was Nick Farrell. But there was no Nick Farrell singing and never has been but there was a Perry Como and I thought for sure I heard Nick Farrell and it turned out to be Perry Como and even possibly Frank Sinatra.

Question: Did your parents try and help you understand?

Jerry: They made every effort for me to understand - I can't remember exactly off hand.

Question: Can you tell me how and when you lost your weight?

Jerry: How I lost my weight was when I was 14½ years old. I was 250 lbs. when I first got to Masland. I started to lose weight very slowly. I continued to lose endlessly - weight when I was 15, after I got into adolescent at Hawthorne Hospital. I lost so much weight by the time I was going on 16, and I got sick with tuberculosis and I went way down and then I gained weight back to 210 lbs. When I first got out here and was readmitted to Hawthorne State Hospital, I weighed 210 lbs. The overweight was very critical for me at the very beginning of the second year at Hawthorne and then the weight went down to a reasonable 180 to 190 lbs. which I still weigh now.

(Voice): Let some other people have their turn.

Question: Tell me about your job. Did you like your job?

Jerry: Yes, I had a job for three years as an antenna specialist which was on Euclid Avenue, entering into the suburbs called East Cleveland Village. And that company assembled antenna cylinders and antennas, etc. I couldn't settle down on the job just recently - I got so nervous when things did not work out and started complaining in a babyish way and so forth, and they let me go on account of that. But now I am getting help from the Hill House Mental Health Rehabilitation Center and that is doing a lot of good for me now.

Question: Jerry, you said when you were giggling at the time you said there were funny things going on in your mind. Could you give us an example?

Jerry: That is exactly right. I can't remember any of the funny things mostly, but one thing that made me giggle a lot that I remember very clearly was when I was 8 years old some funny thing went through my mind about a record player. I used to make up a story about a record player when I was a little 8 year old kid and I called it the milk record player because it didn't play records, it played milk. And that sounds like kid stuff, but I was the age for it. I even mentioned to my two sisters Winnie and Shelby about my stupid ideas of the milk record player. And they were talking about it too.

Question: Jerry, what kinds of food do you like?

Jerry: The foods I like are spaghetti and hamburger and hot dogs, bacon, sunnyside up eggs, meat, etc. I like cereal and vegetables.

Question: Do you like music?

Jerry: Yes, the music I like is the popular music which is the conventional pop and the rock and roll, soul and the progressive rock and the swing jazz of Tommy Dorsey of the 30's and 40's. I also like the semi-classical such as ballet music and the popular music such as conventional rock and roll which are swingier and jazzier, played by swinging orchestra.

Voice: Thank you, Jerry.

PERCEPTUAL DEVELOPMENT IN AUTISTIC CHILDREN
HOW TO HELP THE CHILD WITH A LEARNING DISABILITY

Morton J. Schomer, O.D.
Cleveland, Ohio

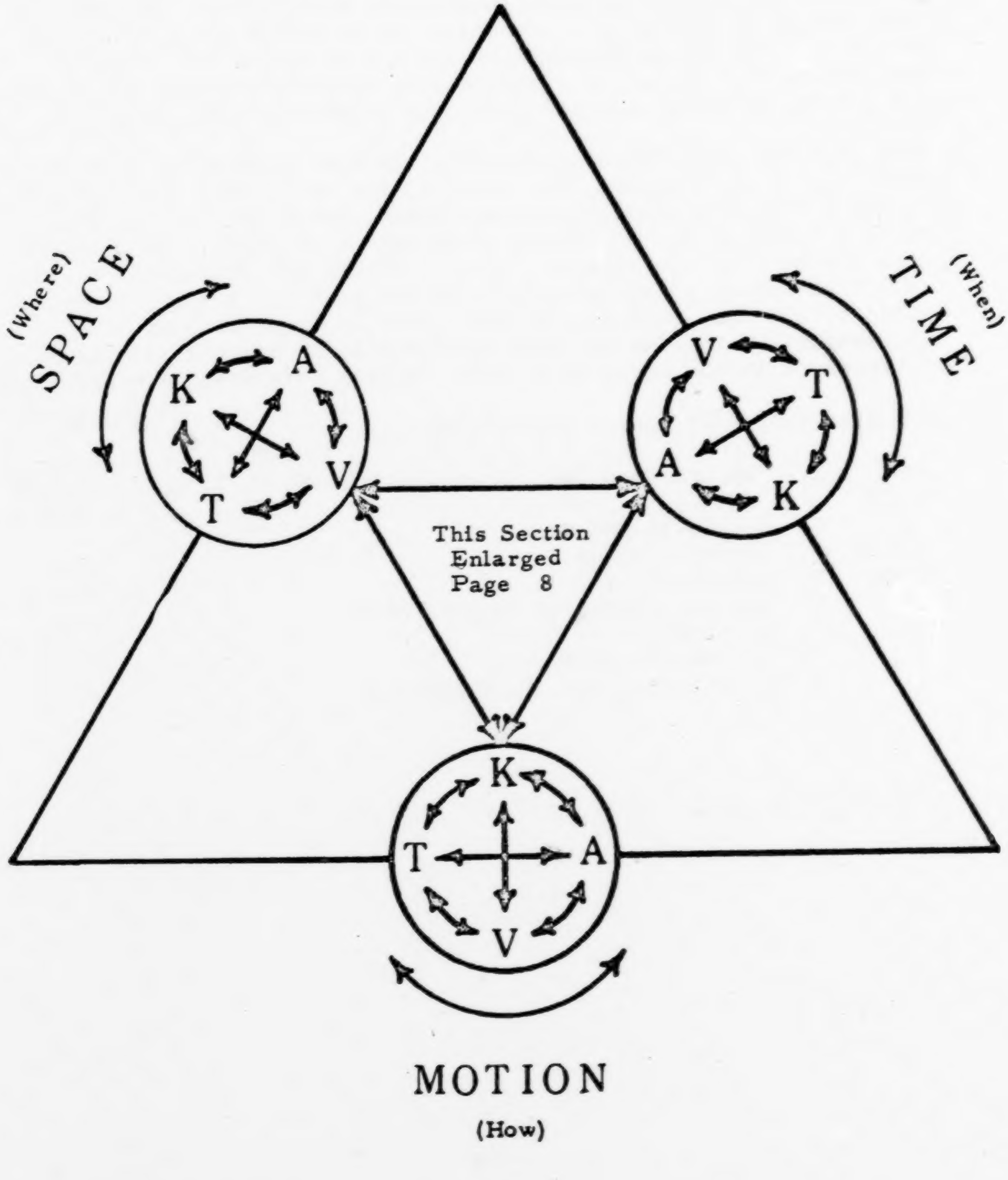
Countless terms have been used to describe children with learning disabilities. Regardless of the labels, training is vital in order to help these children adapt and learn in their world. Although heredity, injuries, physiological disturbances, and environmental factors may limit development, the plastic and adaptable systems of the child often enable total performance to be improved. In short, the child needs to be helped to learn how to learn.

Most children with learning problems have not acquired the basic information about the world they live in - motion, space and time which constitute the foundation of the intellectural mind. Before the abstract or so called academic subjects are presented to the child, he must become aware of the concrete things in his environment. He must know how to move himself and how to move objects. He must know where he is in space and where objects in space are located. He must know about the timing of his actions and the timing of the external world.

This concept of perceptual development has been diagrammed in Figure 1. The sides of the large triangle represent the physical realities - motion, space, and time. The triangle shows the relativity of these physical realities. Relativity means that motion, space, and time are connected phenomena. None is an absolute or independent of each other. Each one is defined by the other two and each one exists in relation to the other two.

The letters K A V T represent the sensory modalities - kinesthesis, audition, vision, and touch. The child may perceive or become aware of motion, space and time with each sense. For example, vision is usually used for spatial awareness (where), but with eyes closed one may become aware of space by audition if there is sound.

PERCEPTION - The Concrete World
Figure 1.



The child has to become aware of a figure out of ground. Figure is what you pay attention to and ground is what you do not. The sides of the triangle illustrate the grounds of motion, space, and time. The three circles indicate the figures. This concept of figure and ground has been summarized in Figure 2. During this first stage of perception, the child learns about the differences in himself and the differences in the world around him, that is, the figures out of ground - for motion, the start-stops, for space, the points in space, and for time, the points in time, now.

Many children with learning disabilities have difficulty with the basic act of perception. For example, the child does not know how to start and stop himself. He is clumsy, bumps into walls, etc. He does not know how to attend to an object in space. He does not know how to time his actions. His movements are not synchronized. This first stage of remediation requires that the teacher move the child by lifting, pushing, pulling, etc. in order to help him increase his awareness of these differences in himself and the differences in the world about him. I call this Stage I - IMPOSITION.

Demonstration Of Training Procedures:

BODY SPACE
↓
OBJECT SPACE

1. "How To Keep Your Child Fit From Birth To Six" - Bonnie Prudden
2. Angels-In-The-Snow
3. Clapping Hands
4. Jumping In Air
5. Jumping In-Out Of Hoop On Floor
6. Kick Object
7. Put Blocks In Box
8. Draw Lines, etc. On Chalkboard

PATTERNS OF THE PHYSICAL REALITIES

	MOTION	SPACE	TIME
GROUND	Velocity (feet/second, miles/hour, etc.)	Distance Length, Width, Height (feet, miles, etc.)	Duration (seconds, hours, etc)
FIGURE	Acceleration - Deceleration or Start - Stop A "Point" in Motion	A "Point" in Space	A "Point" in Time

Figure 2

The child needs to transform the information that he abstracts into meaning. He has to "make sense" out of his perception. This is accomplished by the development of a communication network between his senses. During this second stage of perception, he learns about the similarities in himself and the similarities in the world about him. In Figure 1, the arrows represent this process. For example, when the child watches the teacher raise her hands above her head and imitates by raising his hands above his head, he is matching his visual process with his kinesthetic process for this spatial awareness. When he hears the clap of the teacher's hands and imitates by clapping his, he is matching his auditory process with his other processes of vision, touch, and kinesthesis for temporal awareness. When he sees the teacher walk slowly then fast, stop then start, and then imitates, he is matching his visual process with his other sensory modalities for motion awareness.

Many children with learning disabilities have difficulty with this advanced act of perception. For example, when the teacher is printing a letter b on the chalkboard, the child cannot imitate and copies it like a d instead. This means that the child has not developed good spatial awareness. He has not learned to match his visual process with his kinesthetic. Similarly, to follow across a line of written words with his eyes requires that the child "imitate" the direction of the writing. This is an inanimate imitation. Many children skip words, lose their place, and have to use their finger to keep their place while reading.

This second stage of remediation requires that the teacher provide situations so that the child can imitate her actions and copy her reproductions. I call this Stage II - IMITATION.

Demonstration Of Training Procedures:

1. Imitative Movements
2. Chalkboard Imitation-Trace-Copy
3. Stick Men
4. E's - Arrows
5. Desk-Trace-Copy
6. Transfer Chalkboard To Desk
7. Eye Tracking
8. Eye Jumps
9. Far Near Focus
10. Buzzer - Flashlight
11. Buzzer - Foot Stamping
12. Lines On Floor
13. Hoops On Floor
14. Music-Poker Chips On Floor
15. Parquetry Blocks
16. Blocks - Clapping

Pittsburgh Public Schools

Division of Mental Health Services

ROSNER PERCEPTUAL SURVEY
(RPS)

Name________________________ School________________________ Grade_____

Birthdate____________________ I. Q.______________ Date______________

Score (circle)

General Adjustment Responses: Age_____ Birthdate__________ Right or left-handed? Says_____ Shows_____ Can reverse_____ Cannot reverse_____	1	2	3
Word Repetition: animal___ breakfast___ spaghetti___ philosophy___ elephant___	1	2	3
Near Visual Acuity: (With/without Rx) R: OD: L: OS: OU: DVA:	1	2	3
Stereopsis: Fly_____ Row_____ Box_____	1	2	3
Auditory Organization: V: assists_____ Random_____ confuses_____ Repeats number only_____ Pattern_____ Reverses_____	1	2	3
Gesell Copy Form: Organization	1	2	3
External configuration	1	2	3
Hand preference: R L Internal detail	1	2	3
Cover: Far: No___ slight___ marked (eso or exo)___	1	2	3
16": No___ slight___ marked (eso or exo)___	1	2	3
Near Point of Convergence: 2/4_____ 4/8_____ 8" or more_____	1	2	3
Pursuits: Monocular Binocular (sig. poorer R L)	1	2	3

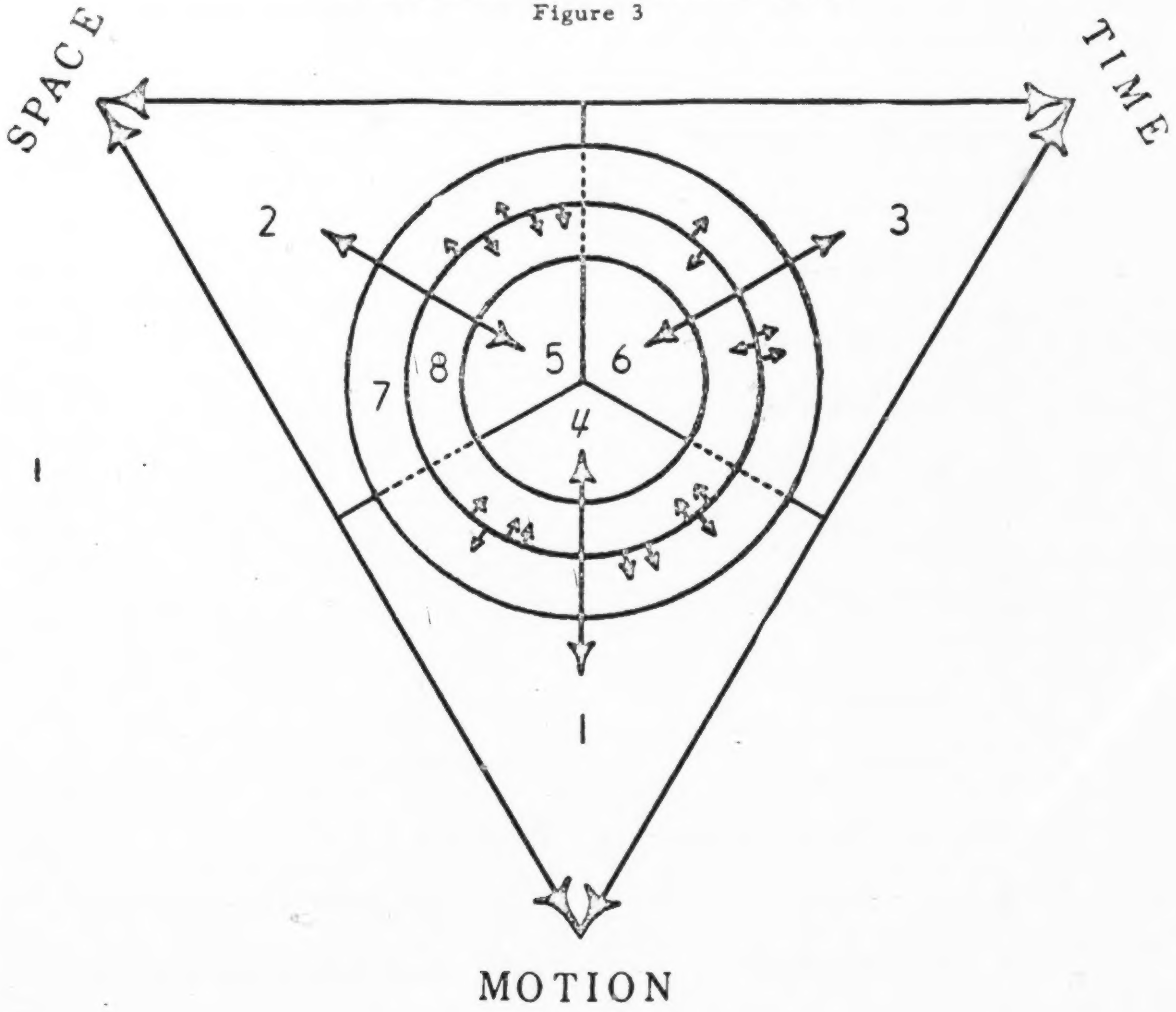
Retinoscopy:	(with/without Rx)			
Static: OD				
OS		1	2	3
Bell: OD				
OS	Par. No.____	1	2	3
Book: OD				
OU		1	2	3
Motor Skills:				
	1 foot balance	1	2	3
	1 foot hop	1	2	3
(Sig. poorer: R L)	2 foot hop	1	2	3
	skip	1	2	3
	throw R L	1	2	3
	kick R L	1	2	3
Identification of Body Parts:				
eyes___toes___nose___knees___shoulders___ankles___				
ears___elbows___mouth___wrists___		1	2	3
Rhythmic hop:	1/1____ 2/2____ 1/2____ 2/1____	1	2	3
tap:	1/1____ 2/2____ 1/2____ 2/1____	1	2	3
Split Form Board:				
Hand preference: R L B	Reguires demonstration____			
Process:	Understands cross____			
	Completes board____	1	2	3
Auditory-visual:				
1 2 3 4 5 6 7 8 9 10	Not comprehended____			
	Repeats number only___			
	Reverses___	1	2	3
Tactual-visual:				
Shape____	Hand preference:			
Size____	R L B	1	2	3
Rutgers Drawing Test:				
	Pencil grip____	1	2	3
Hand preference: R L	External configuration	1	2	3
	Internal detail	1	2	3

TOTAL SCORE ________

Reprinted from Working Paper 47 - Identification of Children With Perceptual-Motor Dysfunction by Rosner, Richman, and Scott, University of Pittsburgh - Learning R and D Center, Pittsburgh, Pennsylvania - $1.00

The third stage of remediation requires that the teacher help the child acquire language skills. I call this Stage III - SYMBOLIZATION.

SYMBOLIZATION - The Abstract World
Figure 3



1.
2. } Signs (SIGNificance)
3.
4.
5. } Symbols
6.
7. Concrete visualization } Two modes of thought
8. Abstract visualization

The fourth stage of remediation requires that the teacher help the child to become a creative member of our society. This creativity or problem solving may be represented by all of the arrows in figures 1 and 3. I call this Stage IV - CREATION.

Summarized below is an operational plan that can be used to accomplish this.

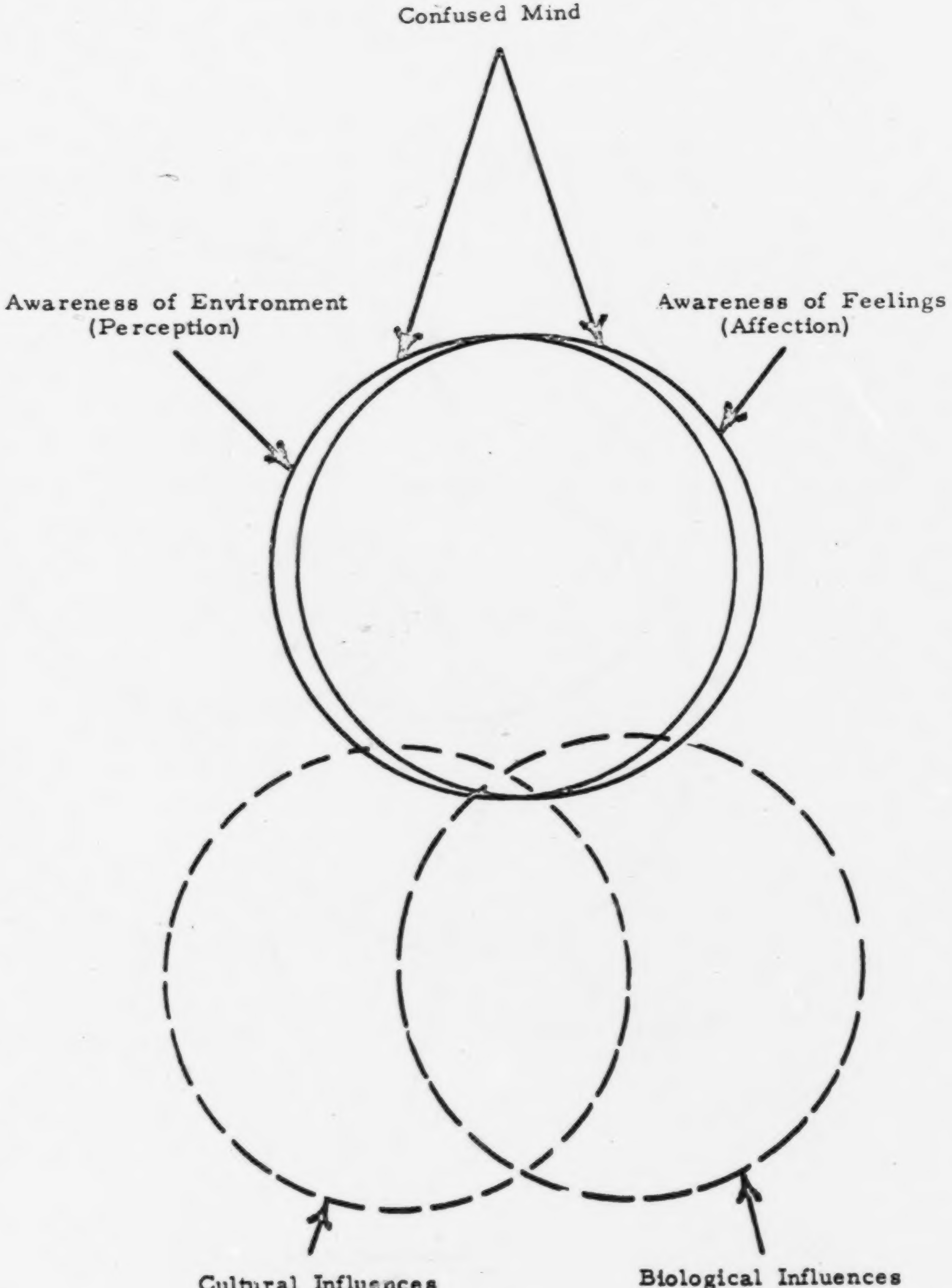
State IV - CREATION

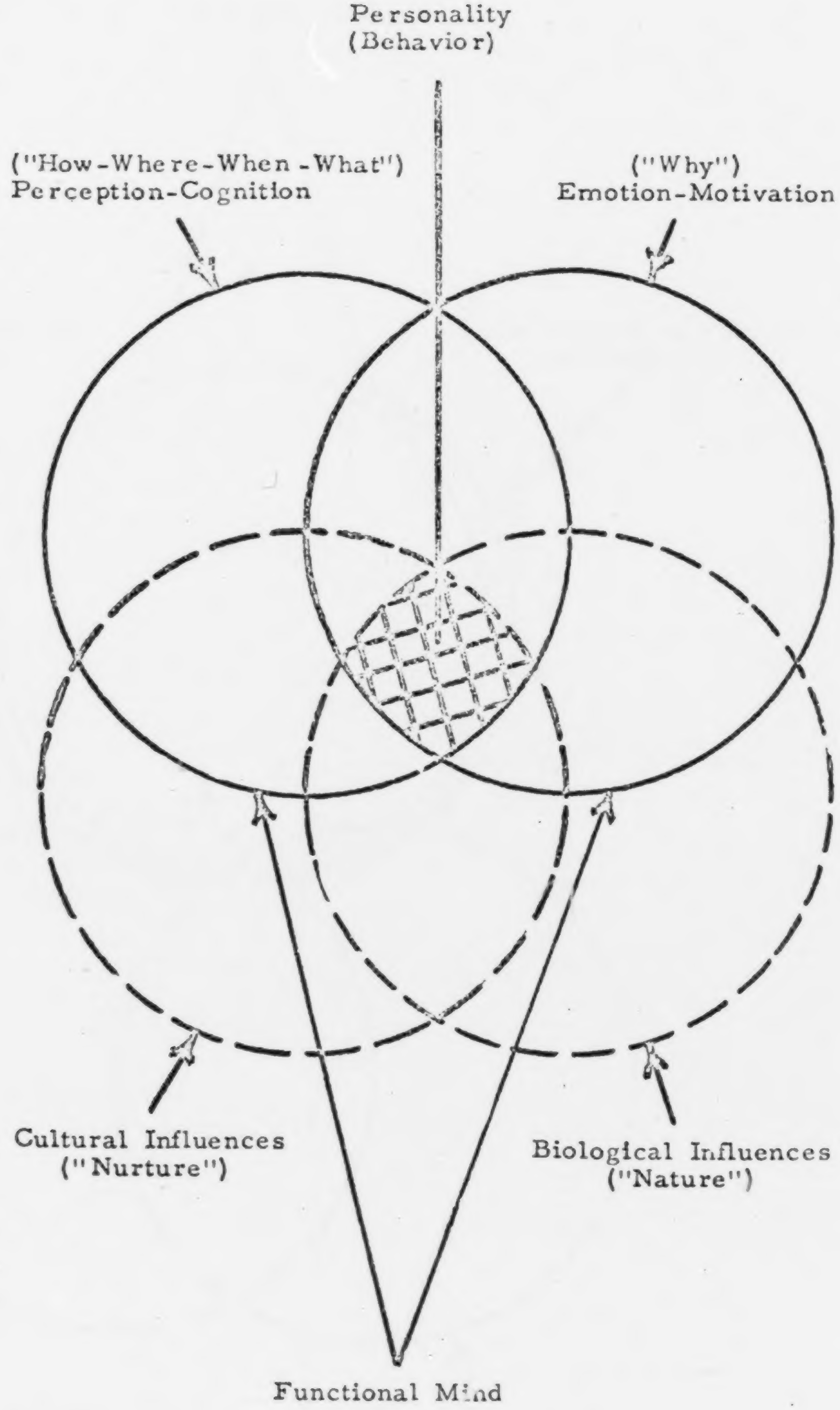
A. Inputs

1. moving
2. listening
3. seeing
4. touching
5. smelling
6. tasting

B. Outputs

(overt)		(covert)
Motion	←→	Thinking
1. doing		1. concrete visualization
2. speaking		2. abstract visualization
3. gesturing		
4. writing		
5. drawing		


Confused Mind
Awareness of Environment (Perception)
Awareness of Feelings (Affection)
Cultural Influences ("Nurture")
Biological Influences ("Nature")


Personality
(Behavior)
("How-Where-When-What")
Perception-Cognition
("Why")
Emotion-Motivation
Cultural Influences
("Nurture")
Biological Influences
("Nature")
Functional Mind

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CHILDHOOD SCHIZOPHRENIA: EVOLUTION TO ADULTHOOD

Ralph Rabinovitch, M.D.
Hawthorn Center, Northville, Michigan

When your president called and asked me if I would participate in this meeting, I was simply delighted. I've watched the progress of your meetings, and they seem to be getting better and better. They have gotten so good, they had to end with this bad note, so here I am. Actually, I am very pleased that you have all come to visit us here in Michigan.

It is difficult to talk briefly about a subject that you have been involved in for so many years. I realize that there are many points of view about some of the issues that I am going to be discussing. I see a great many experts in the group here, and I invite their questions and discussions.

The topic I have been asked to discuss is a follow-up study of childhood schizophrenia. I will report some of the research findings from our group at Hawthorn Center. I have presented some of this material before, but today I am bringing it up to date with some new information I would like to share with you.

First of all, I am not at all concerned about semantics, that is, the labeling of the children you are concerned with as "autistic," "schizophrenic," or what not. I think the words often get terribly misused; people can become totally involved in the semantics. More important, I think, is what happens through the years after the child is first diagnosed at the age of four or five. My feeling has been that these kids look like adult schizophrenics when they grow up to say, the age of twenty. I decided that my staff and I had become so involved with them that it would be wise to have an outside opinion as to what the adult clinical picture looked like.

Consequently, I asked two very distinguished workers in schizophrenia, Dr. Gottlieb, and Dr. Beckett, for that opinion. Dr. Gottlieb is in charge of the Lafayette Clinic, and, as you know, is doing some very interesting work on the bio-chemistry of schizophrenia. Dr. Peter Beckett was the associate director of the Lafayette Clinic; both of these doctors are experts in the field of schizophrenia. I asked these men to interview twenty consecutive cases from our earlier studies; to look at these young people, their ages were seventeen to twenty-eight at the time, and make a diagnosis as if they had just walked into their office with no prior history.

They saw nineteen patients, and made an unquestioned diagnosis of schizophrenia in eighteen of the cases. They felt one individual might be mentally retarded, but there was some question about that. Actually, I don't think it matters a great deal what diagnosis you give these kids later. We were more interested in their functioning, more interested in the clinical picture, the level of competencies that we were able to give our patients.

I think it is important to recognize that it is not unlikely, on the basis of adult studies, that what appears to be a different clinical condition at the age of one, two, or three, looks, by the age of eighteen, twenty-one, or twenty-five, much more like typical adult schizophrenia. If the onset of illness occurred during the first few years of life, you would expect a different clinical picture than if it occurred at the age of nine or ten. This probably accounts for the variety of clinical pictures we see. I do not differentiate between infantile autism and schizophrenia. In fact, I would rather drop both terms and use another term which I will come to in a few minutes. The term doesn't mean a thing. I want to make this clear, because this paper is entitled CHILDHOOD SCHIZOPHRENIA: EVOLUTION TO ADULTHOOD. Some of you may want to raise questions about this, and, of course, I will be glad to discuss this further. I want to tell you a little about these twenty young people that comprised our study group. All of these patients had in their histories strong suggestions that the onset had occurred within the first three years of life, so, I suppose they would be considered to be cases of infantile autism. We have followed the same criteria Dr. Kanner did in the diagnosis of these cases.

There were nineteen families in this study; two of the patients were brothers. You raised the question of religious background; thirteen families were protestants, three were catholic, and three were jewish. This was the usual ratio among the patients we were seeing. We were interested to find that the occupation of the father was generally at a pretty good economic level;

the educational level was excellent, and the occupational level very high. There were three professors, three research chemists, two physicians, two ministers, two engineers, and only two factory workers in the group. As many of you would expect, it turned out that this was a spurious kind of situation, because the cases were highly selected.

Hawthorn Center, which is a very unselective state facility, totally supported by the state of Michigan, serves the courts, and many less sophisticated agencies; all kinds of families are served. We used the same criteria for diagnosis of autism as did Dr. Kanner. I asked the staff to choose at random twenty-seven children, consecutive cases, that are now in the Hawthorn program. Of those twenty-seven, nine of the parents were professionals; three physicians, one optometrist, one podiatrist, an architect, an attorney, a teacher, and an accountant. There were seven skilled trades-people; three mechanics, a policeman, electrician, barber, and a fireman. Four were semi-skilled workers; five unskilled people, and two chronically unemployed; one for reason of illness, one for reason of irresponsibility. I would say that there is a general distribution within the population. I know there are people who have found a different distribution, but this is certainly not our experience. I have no doubt that Dr. Kanner would use similar criteria. The fact that we have these two apparently different distributions; one in this selective clinic, and one in a state clinic is, I think, significant.

Looking at these cases further, we found that twenty-four of these patients were boys, and three were girls; twenty were white, seven were black. Again, this ratio reflects the general pattern seen in this clinic.

Now, let us go back to the twenty cases of older patients we were re-evaluating. At the time of this study, their age range was from twenty-four to thirty-five years. Two of the patients had died; one of a situation completely unrelated to his schizophrenia at all, but from lymphosarcoma at the age of nineteen years. The other died recently in a state hospital of an aspiration pneumonia, which was probably related to his very severe illness. The prognosis in any group you hear or read about depends on one major factor, that is, the severity of the illness. Schizophrenia or autism may be very severe, or fortunately, less severe, and regardless of what treatment method is used, it is general for the milder cases to do better than the more severe, which I am sure is not a startling finding. If you work in a patient population which tends to deal with milder disturbances, chances are that your prognosis or your follow-up would be more positive.

In re-evaluating these selected cases, we found that about one-third of the children that had been diagnosed as being autistic had a relatively positive social prognosis; one-third poor; and one-third very poor.

We have now studied some three-hundred schizophrenic-autistic children from a total of approximately twenty thousand children's cases from the Hawthorn Center. We have also started to follow about one-hundred of these cases into adulthood. Let me give you a general picture of what these young people looked like as adults. I would say that all presented evidence of a degree of disturbance, although some have made a relatively positive social adjustment. There are remarkable similarities in their present personalities, and in their behavior.

Their general physical appearance is very immature. In spite of apparent normal physical development, there is a childlike facial expression, and a manner that has a tendency towards wispiness. A high percentage would have to be described as quite charming. They have a quiet and wispy quality which is often appealing. Many appear to be tense, perplexed, and questioning. Some in the age group over twenty, in spite of normal size, look, sound, and behave as they did when we first saw them in early childhood. In these cases, emotional maturation seems to have never taken place. Their manneristic gait, erratic speech changes, a kind of motor looseness, and motor mannerisms were common. Their speech tended to be poorly modulated, with a tendency towards monotonous inflection, with a rising or interrogative terminal inflection. We observed a clipped staccato speech in some cases.

One of our most interesting findings was that in many cases there had been a remarkable improvement in their language skills, and their capacity for verbal expression. We at Hawthorn feel, as do most all other workers in this field, that the deficit of language, the inability to communicate, is one of the major handicaps of the autistic child. Language development beyond speech, i.e., conceptual language, expressive and receptive, may not be as basic as it appears. We observed a marked improvement in language in a great many of these individuals, which had occurred spontaneously.

Many of these individuals still presented an unusual syntax which you would call perseverative questioning, but this appears to be more of a reflection of thought content or conceptualizing, rather than language per se, and I think this is an important observation.

Most of the group appeared to be very anxious, a pervasive anxiety. We did not find emotional flattening. Most of you will recall the old description of chronic schizophrenia, which people said led to emotional flattening where there was gross neglect of the needs of the individual. Where there has apparently been reasonable contacts for the young people, emotional flattening has not occurred. The thought content suggested that almost all of these cases exhibited immature preoccupations, with a continuing obsessive interest in orientation clues. Sexual interests were found to be limited as expressed; there was very little sexual behavior in the group as a whole, although there was, in some cases, a consciousness of social and sexual isolation. When we talked to these patients, they seemed to be deeply concerned about their sexual futures.

Reality testing often was efficient in selected areas. Hallucinations were not present, although autistic lapses and preoccupations were common. Paranoid delusions were not found.

The continuing mis-identity and pervasive uncertainty probably led to continuing misinterpretations. We were particularly interested in the legal or behavioral outcome, and are pleased to report that we found no delinquency in any of these twenty cases, or in any of the other many cases we studied but did not include in this report. Where community resources have been limited and the patient has remained at home with no activities, some have become belligerent within the family, occasionally striking out.

Of major importance is the fact that social inappropriateness has, in some instances, made some difficulties in the community. Recognized as being unusual and bizarre, some of these individuals have been suspected of delinquency, especially sexual, without any justification. This has led to problems for some of our patients and their families. We at Hawthorn have occasionally been called upon to interpret these situations to the community.

When this was done, we found the community's fears were allayed.

I mentioned earlier that I thought the terms "autism" and "schizophrenia" were grossly overused; perhaps abused is a better word. Autism, as you know, is not a diagnosis, but rather a symptom which is present in some deaf, blind, many severely retarded, and encephalopathic children. Dr. Kanner, Dr. Rimland, and others have used the terms "schizophrenia" and "early infantile autism" very slectively. We feel that the widespread overuse of these terms is a major problem.

The core of these children's problem appears to be the failure to develop adequate, ego boundaries, with the personality remaining amorphis and floating. There is an inability, common among all age levels, to experience a clear-cut self percept, and to appreciate the authority of reality, of identity, boundaries, and limits. As a consequence the psychotic child has difficulty in differentiating himself from his environment. This will continue to be a problem to some degree throughout his lifetime. Experiencing no clear-cut limits to his own boundaries, it is as though he merges diffusely with the objects in his environment. We suggest the term "dis-identity" as most accurate to describe this basic problem of disturbance or distortion in the appreciation of identities. We believe the term "primary dis-identity of childhood" best describes this condition, as it pinpoints the actual psychopathology involved.

The name used, however, is obviously not the most important consideration. Of more basic importance is our understanding of the process of the disturbance, and the needs of the individual family and child.

Let me take a minute to tell you about the children as they emerged into adulthood. We found that although all of these young people had started out with probably the same amount of original pathology, some had done much better than others. I must start with our most interesting case, which is a real success story. This was a young man with a very severe autism diagnosed at the age of two years; no speech until four years of age, and then many neologisms; an I.Q. of 60 on the Stanford-Binet test at age five. He has graduated from one of the finest universities in the country with a Ph.D. in mathematics, and is now teaching mathematics in an eastern university. He is a most unusual young man, by the way. It was most gratifying to know of the progress he had made, although I thought it was very apparent that the dis-identity problem he had had at two years of age was still present. There were several others that Dr. Kanner described in his follow-up study group of nine or eleven who had graduated from college. They generally appeared to be markedly ill at ease socially, but had enjoyed school. Most had moved into routine office, warehouse, or accounting work where they have functioned relatively well.

I am not going to take any time here to discuss any other details of individual cases, but I do want to point out one part of this total effort that may be of interest to you, that is, the longitudinal psychological testing of some of these patients. Some people think it is terrible to call them "patients," but I have been a doctor for so long, I don't even apologize. A new theory in the mental health field is that people are disturbed because we have given them a diagnosis, and labeled them as such. Accordingly, some practitioners are now addressing their patients "colleagues." I am sure that all the autistic and schizophrenic children would not disappear just because doctors began calling them "colleagues" or "friends."

One of the most interesting pieces of material we found related to the psychological testing, as I mentioned. Of the twenty cases included in this study, only four were untestable at any time; of the sixteen testable individuals, three had experienced some deterioration through the years. One deteriorated from an I.Q. of 64 to be totally untestable, and another from and I.Q. of 74 to 63 on a standard test. There were six cases that improved from a retarded level at the initial testing to a functional low-normal at the time of our follow-up study. For example, one eleven-year-old with a performance I.Q. of 74 was found, at age 26, to have a performance I.Q. of 91; in another case, a four-and-a-half-year-old boy scored 58 on the Binet, and, at the age of twenty-one, scored an 85 on the WISC verbal, 90, performance. Most interesting, three cases show very significant improvement. I mentioned the young man whose I.Q. as a child was 60, who had earned a Ph.D. degree. At the age of five years, he had an I.Q. of 60 on the Stanford-Binet; at age thirteen, 116, verbal, 117, performance on the WISC. Interestingly, he remained very autistic and very unusual. At age 19, he tested 123, verbal and 145, performance on the WISC. When we last tested him at age twenty-seven on the WISC, he had a verbal score of 130, performance, 140. We found three cases where there has been similarly remarkable progress to a normal or superior level in young adulthood.

Many people have talked about the expected deterioration or dementia in this kind of patient, which we did not find in our study. I think this is encouraging. I have tried to analyze why this occurred, and believe that in the cases we studied, it was the result of the gradual improvement in language functioning, understanding of the environment, and concepts of abstract thinking. There is no question that intellectual functioning along with academic functioning improved, in many instances, more than the total social adjustment, and the individual's total personality had improved. As one might expect, those that were successful, where there was this positive movement, tended to do much better because their intelligence was accessible, and they could work more productively.

In our studies, we tried to define some of the factors that were of major importance to the final outcome in this group of young people. It is easy to do comparative research on the ages and I.Q.s; there are also some biochemical tests that are easy to do which may help to define some of the factors that may be important to the final outcome of these young people. It is much more difficult to try research-wise to assess factors and their relationship to the ultimate outcome. Obviously, there are many variables and unknowns. Being in the right place at the right time is crucial, meaning that parents must be involved in the right association at the right time, or live in the right community at the right time. Some of the conclusions we reached are subjective, as you will recognize. After studying these cases, and following many of them for twenty-three years here in Michigan, I submit the following conclusions:

1. The crucial overriding factor in determining outcome is the severity of the illness. This is true in all fields of medicine. It is important to remember this when evaluating and comparing all results of different kinds of programs or therapeutic efforts.

2. The second most crucial factor appears to be the family. The factors that apply to all families apply to the families of schizophrenic or autistic children, too. Warmth, empathy, resiliency, positive interrelationships, happy comfortable circumstances, opportunities, luck, and all other things that color a family are as important to a schizophrenic child as they are to any other child.

3. The third crucial factor was the clinical help that the family and the handicapped child received. I feel that if the family is located where good, long-term clinical help is available, this helps the overall prognosis. This care should be in a clinical setting where the child and the family are well-known over a period of years, where supportive services in the form of counseling and crises intervention services are available. These services should include the opportunity for temporary placement out of the home for the child. We have found that some of our children who did best were separated from their families at times of crises and tension that are inevitable in family life. Such placement might be either short or long-term, depending on circumstances; its availability is very important.

4. Another factor that is important in the outcome is the specific intelligence-conceptual capacities, language capacities, and the personality factors in the child; the individual's strengths and weaknesses, the marketability of his skills, his ability to adapt to his environment.

5. In determining the needs of these children, I think the single greatest need is for social training, especially training in the communicative skills. Many of these children have difficulties that are exaggerated because their social training has been sloppy; for example, it is equally as important to know when to communicate and when not to communicate as it is to be able to communicate. In our society, some aspects of social training or social behavior are much more vital than others. Such things as old-fashioned manners, for example, are important social skills. Some of the schools which these children had attended had stressed "manners," and, as a result, some of the children gained enough social competency to meet people and control their behavior in spite of their handicaps.

6. Another issue which is a very vital one, and one about which I know there is much disagreement, is how much protection do these children require, and how long should they have it? This varies from child to child, of course, but the trend is to move autistic and other severely handicapped children more into the main stream of life; into the public schools; community mental health centers are now preferred to state hospitals. Even the state hospitals are changing their treatment regimens, and often include day-care programs. There is a move to close down the large long-term-care institutions, and move children back to the public schools with the idea that they will become more normal by sustaining contact with average children. I think this concept needs careful study.

The cases we studied here suggested that many of these children did require protection for some time before they were ready to move into the typical community situation that involved any competition. This involves segregation in a sense, and it does mean special education, but it also means that we must develop competency in our patients before we ask them to do that which may be too difficult for them. With the very severely impaired, it is not possible at all; with the less severely handicapped, there is the question of how much special protection and preparation for more expanded social living will be required.

7. Next, there is the very obvious need for special education. Regardless of the severity of the impairment, we felt that all of these patients required and should have had some degree of exposure to schooling. Dr. Lorna Wing, who is visiting us from England, has pointed out to us the tremendous variation in the educational capacity and demonstrable intelligence of autistic children. There is not just one group of children that all have the same requirements. You have a whole continium of ultimate potential in this group, ranging from the extremely bright to the rather dull, and you also have a wide variation in motor skills, large and small muscle capacity, and many other factors.

Ideally, schooling should be geared to the capacity of the individual child; it might have to be schooling in the most simple of social skills and the most basic of language skills. Or, as it might be in the case of the brilliant young man I previously mentioned, training in the highest of mathematics. I have spent many hours talking with this particular young man, and found that he has only one delusion, that is, he thinks I understand what he is talking about when he discusses higher mathematics.

The question of where the treatment occurs is vital, and my own preference, especially at the beginning of treatment for the young children, is a psychiatric day-care program. Such a program must be well-structured, developed around an intensive basic education program, with supportive casework for the families, and psychotherapy for the child. When I say psychotherapy, I obviously do not mean interpretive therapy, but rather counseling that enhances development of the individual's social skills. I think you will find that a well-organized, multi-disciplined mental health day-care center may be in the best position to start the treatment more effectively than a public school.

One should see a parallel development of programs both in psychiatric day-care centers and public schools, which should feed one into the other with as much integration as possible.

8. Another factor of obvious importance that I mentioned earlier is the availability of in-patient short-term or long-term care when needed. This service must be available regardless of the severity of the child's disturbance. There must be a child's care center or children's hospital program which is separate from the adult program, and which, regardless of the severity of the impairment, has to be developed as a school within the hospital rather than a hospital with a little school attached to it.

9. Lastly, vocational training is absolutely vital, and should be started much earlier with some of our patients than we have previously done. Certainly by the age of sixteen, most, if not all of these boys and girls should be placed into some kind of occupational training program. After completing this training, here again it is imperative for the supportive services to assist with some kind of job placement program. Sheltered community workshops should be developed to provide work experience for the very seriously handicapped adolescents and adults. Probably

twenty percent of the total group will be able to work at some kind of gainful employment. This percentage would probably be higher if there were more opportunities for employment for the severely handicapped within the community. We feel that most of these individuals could work, if not in paying jobs, then in volunteer job experiences which could possibly enhance work skills and self-esteem. Very often, we found in our follow-up study that where a sheltered workshop was available, this was the difference between social conflict, and a peaceful relationship for the patient and the family.

This workshop should be a place where a young man could work several hours every day sanding furniture, doing a very simple sorting job, or more complex work, depending on individual capacities. It is obvious that some of our communities have done much more than others in the provision of such opportunities and services. The prognosis in many cases frankly depends on the availability of this kind of resource.

It is now clear in all our minds that your job as an organization is to fight for these services. Here in Michigan, many of us are aware that you are in a much better position to push for development of the kinds of programs we have outlined than are we professionals. They are rather tired of seeing us in the Capitol. The Michigan Association for Disturbed Children works very closely with your Michigan State Society for Autistic Children. In Lansing, they do better than we do as professionals, and when we all go together, I think we can do best of all.

CITATIONS AND AWARDS

presented at
FOURTH ANNUAL MEETING OF THE NATIONAL SOCIETY
FOR AUTISTIC CHILDREN

The National Society for Autistic Children
honors
Lorna Wing, M.D, D.P.M.

for her many enlightened contributions to the welfare of autistic children and their families throughout the world.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
C.S. Harding Mott

in grateful recognition of his abiding efforts on behalf of all children and his untiring devotion toward the humanitarian goal of integrating the handicapped into the community.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
and the
Michigan Society for Autistic Children
honor
Dr. Herman E. Warsh

whose enthusiastic support, wise guidance, and efficient coordination contributed so much to the success of the 1972 national conference.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
Donald Jay Cohen, M.D.

Man of Learning, Quiet Listener,
Humane and Wise, Friend to Our
Children.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
S. Clarence Griffith, Jr.
President 1970-1972

in appreciation for his years of
loyal service.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
James Schliff

in appreciation for his continued loyal
service to both our national and New
York State organizations.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
Owen Hackett

in recognition for his years of unselfish
dedicated service to our organization.
His tireless efforts are largely responsible
for the growth and efficacy of NSAC.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
Ruth Sullivan

with the award of a medallion for her devoted service to our children.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
Ruth Dyer

with the award of a medallion for her devoted service to our children.

June 23, 1972 Flint, Michigan

The National Society for Autistic Children
honors
Ruth Hancock

with the award of a medallion for her devoted service to our children.

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The National Society for Autistic Children
honors
Phyllis Goldberg

with the award of a medallion for her devoted service to our children.

June 23, 1972 Flint, Michigan

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